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OUTLOOK '82



Agricultural
Outlook
Conference

United States
Department of
Agriculture

Nov. 2-5, 1981
Washington,
D.C.

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December 1981

In this volume, you will find all papers submitted for publication by program participants in the U.S. Department of Agriculture's 58th annual Agricultural Outlook Conference, held in Washington, D.C. on November 2-5, 1981. Outlook '82 drew a record attendance of more than 1,500 people to its 36 sessions.

Publication of the proceedings in this format results from budgetary constraints throughout the Federal Government. It is likely that in future years a user charge will be assessed to cover the cost of printing and postage. I know you support USDA's effort toward greater fiscal prudence in this area, and I appreciate your cooperation.

One copy of these papers is being provided to each Outlook '82 registrant or participant. Thank you for your interest in the conference. All those who receive this publication by mail will be sent preliminary information about next year's Outlook Conference in mid-September 1982. Conference dates are November 29-December 2, 1982.

Best wishes in the coming new year.

Terry N. Barr

TERRY N. BARR
Chairman
Steering Committee

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U.S. Department of Agriculture
Office of the Secretary

It is a privilege for me to be here today to welcome each of you to "Outlook '82," the 58th annual Agricultural Outlook Conference conducted by the U.S. Department of Agriculture.

This is my first Outlook conference as Secretary of Agriculture, and it gives me great pleasure to greet you in this capacity.

Since its beginnings in the 1930's, this conference has been a major vehicle for information-sharing in the USDA. Never has the need for solid, accurate information based on reliable, objective and timely outlook work been more crucial than it is today.

The flow and exchange of information must take place on a global scale to be effective. The number of foreign participants here today is a clear indication of the international importance of outlook work. I am happy to greet our friends from all over the world to this conference.

As the word "Outlook" implies, we are going to be turning our eyes toward the future -- a future that will constantly change as it reacts to decisions and events of the past, and those that are yet to happen. It is change, both known and unforeseen, that has led us to continually broaden the scope and purpose of this conference over the years.

This year, however, I would like to attach a special significance to the future as we go about the business of this conference. It is very appropriate to say that this year we are truly at a turning point -- a turning point that is much more significant than the passing of one year to the next. We are standing on the threshold of a new and exciting era in American agriculture. It is an era that will place agriculture on center stage. The work that we do will be spotlighted as we meet the challenges that await each of us in the future.

Remarks prepared for delivery by Secretary of Agriculture John R. Block before the Agricultural Outlook Conference, Session #1, Washington, D.C., November 2, 1981

As usual, throughout this conference we will be drawing from the resources of history as we attempt to put together what we feel will be the most up-to-date outlook for the future year. But, what makes this particular outlook conference different from others in recent years is this: Not only are we moving from one year to the next, but we also are at the pivotal point in the approach our government is taking as it makes decisions affecting the economy of this nation -- and this includes the agricultural economy. We are in the midst of a historical change in our government.

Many people could see what was happening. Among those is Austin Kiplinger, who publishes the biweekly Kiplinger Agricultural Letter. Recently, he wrote:

"Tremendous changes this year...Greatest in several decades. A new President. New Congress. A turnaround in government policies, broader than most people have ever experienced in their lifetime. We're truly having a quiet revolution. The reversal of a trend that began with Franklin Roosevelt in 1933...Nearly a half century ago. And soon the results will begin to take shape...Slowly at first. Reagan's new economic program just went into effect on October 1."

As Mr. Kiplinger said, the economic recovery program is just underway. And the Administration's farm program is an essential part of the overall program. The farm program, of course, involves both our domestic policy and our international trade policies. They are interdependent, and we must take an active role in both areas.

The past several months have been a crucial time for us all. Few periods in our nation's history of agricultural policy have seen so many critical issues faced so early in a new Administration. Not only have we undertaken the monumental task of moving farm legislation toward a more market-oriented posture, but we have also moved forward in the international arena. We have put the concept of embargoes behind us and we are aggressively seeking the world markets to keep agriculture growing. We must have access to the world's markets if the greater market orientation of domestic farm programs is to be successful. Additionally, and of equal importance, we have sought to make our contribution to the battle of reducing budget deficits by placing agriculture's priorities in perspective. The budget reductions have been difficult and certainly are not over. However, from this budget process has come some clear priorities which must be faced in the future.

Priorities such as agricultural research and soil and water conservation could dramatically affect our ability to meet the challenge of the 80s.

I realize that it may sometimes be difficult to turn our attention toward the future with any degree of optimism -- especialy at a time when farm income is suffering such as it is. High interest rates have pushed costs up rapidly in the farm sector, while inflation has eroded not only the farmers' income, but the purchasing power of consumers who buy their products. However the government has entered into a pact with you the private sector by asking you to assume more responsibility. It is a responsibility which I sincerely hope every one of you will view as a challenge. The President's Economic Recovery Program holds the key to moving the economy forward and eliminating the market distortion brought on by too much government involvement. A primary architect of this program, and a gentleman with whom I am proud to serve in the President's Cabinet, is our opening speaker at Outlook '82.

I am proud to introduce the Secretary of the Treasury, Donald T. Regan.

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TREASURY NEWS



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FOR RELEASE UPON DELIVERY
Monday, November 2, 1981

Remarks by
Donald T. Regan
Secretary of the Treasury
before the
U.S. Department of Agriculture's 58th
Annual Agricultural Outlook Conference
Monday, November 2, 1981

I want to thank Secretary Block for asking me to join you for this important conference, and for the opportunity to explore the general economic outlook.

But before we explore it, it's first necessary to explain it.

That may seem a bit redundant since you can't open a newspaper or magazine today without reading three or four detailed efforts to explain the state of the economy. Unfortunately, most of those explanations either don't make much sense, or disagree with one another, or all of the above. No wonder people are confused. In fact, if I believed all of the plans, projects, and proposals that have been attributed to me by one pundit or another, I'd be confused myself.

So, I've set myself the task this afternoon of explaining, as best I can, what this Administration is doing about the state of our economy, why it is doing it, and where we are going.

The best way to begin is to remind you why it was necessary for this Administration to make such an energetic and far-reaching effort to change the course of the economy. When this Administration took office it was after decades of mistakes that transformed an economy, for so long an eighth wonder of the world, into something that faltered, sputtered, and was headed for certain disaster.

Our economy, when compared with the performance of Japan, Germany and other nations could only be considered poor.

That poor performance became worse in the years from 1977 through 1981, with inflation soaring to 13.5 percent; with the prime interest rate tripling; and with an almost 100 percent increase in the FHA mortgage rate.

Given the burdensome tax rates then prevailing, together with those punishing rates of inflation and interest, perhaps that is what the farmer had in mind when he was asked what he would do with the million dollars he had just won in a State lottery. "Keep right on farming," he answered. "As long as the money holds out."

While the American people may not have expressed it in those terms, they understood that the path laid out in the final budget message of the previous Administration was taking us to a situation where increases in total government outlays would be equal to about 60 percent of the anticipated rise in the national income.

In short, government was nibbling its way into a State economy, using the tax system as a conduit to redistribute wealth, the budget as a universal, perpetual Christmas tree, and the Code of Federal Regulations as a scenario for controlling and redirecting business initiative.

No wonder President Reagan's first major Message to Congress dealt with economic recovery. No wonder he said "We can no longer procrastinate and hope things will get better." No wonder he told Congress: "Unless we act forcefully and now the economy will get worse."

He then proceeded to give the nation his prescription for economic recovery.

Both opponents and proponents of that prescription have taken to using two different names to describe the basic philosophy behind it. We hear the word "Reaganomics." And we hear about "supply side economics."

Those are handy terms to indicate that something different from the discredited and obsolete Keynesian approach is being provided. And to that extent, I suppose those are useful terms.

But they are also misleading to the extent that they imply any mysterious new formulas.

The fact is that Reaganomics and its synonym, "supply side economics," are neither new nor mysterious. What is being expressed by these terms is that you can't run a country, or a farm, or a business without providing incentives. When incentives exist people naturally work harder, thus producing more wealth, more savings, more investment.

When this country was first born and struggling to keep its head above water, as a brave, new experiment in democracy; when its economy and credit were shredded and suspect from years of war, weak government, and internal dissention; the first Secretary of Treasury, Alexander Hamilton, produced four famous documents, each addressing a crucial national economic problem. Two central themes in those documents were: trust in the central government, and incentive should be rewarded.

Some of the problems this nation finds itself facing today are the same as those that confronted Washington and Hamilton -- an inflated currency and a lack of productivity.

And the aim now, as the aim then, is to unlock the energies and creative genius of the American people, to break down artificial restraints to endeavor, to eliminate inflation as a kind of secret weapon of government fiscal policy, and to restore trust in the dollar.

That is what Reaganomics is all about.

As for the words "supply side," it simply means that for too long we've been focusing public policy on what to do with people's tax dollars and how best to take from Peter to give to Paul, without thinking about where those dollars come from.

Perhaps the best example of supply-side thinking comes from Agriculture.

American agriculture today is an inspiration to the world. One barrel of oil consumed in growing crops produces a revenue equivalent of 11 barrels of oil, simply because we have taken such pains with the supply side.

The incredible advances made in developing new and evermore productive seeds; our efforts to replenish and reinforce the productivity of our soil; and our focus on eliminating or neutralizing insects and weeds -- all are a tribute to what can be done when attention is riveted on the supply side. Another word for this is: abundance.

And that abundance -- for working men and women everywhere, urban and rural -- is what the President was aiming at in his four point economic recovery program.

Those points consist of restoring incentive by cutting taxes, by eliminating unnecessary government activity, by asking that the cost of government regulations be justified by their benefits, and by a noninflationary monetary policy.

Let's look at each of these and see how they support and reward initiative.

First, for the budget cuts. These are a response to the fact that government has been running on red ink for 26 of the last 30 years. That simply cannot continue. You can't keep planting in the same soil without fertilizing. Everybody knows that. Well, you can't keep borrowing from tomorrow to pay for today, and still hope to grow a healthy economy. If you try it long enough -- and our nation has tried it far too long -- you get inflation.

For a great many years the federal government has launched one new spending program after another, certain that revenues would be increasing because of the interaction of inflation and the progressive tax structure. Inflation earnings -- though not purchasing power -- increased, which pushed the worker into ever higher tax brackets.

Thus government could go on expanding without the need to go to the American people and say, "Are you willing to accept a tax increase." It was, not as we learned in school, "Taxation without representation." It was, instead, "Taxation through misrepresentation."

As a result of the so-called "bracket creep" -- inflated wages and profits pushing everybody into higher and higher tax brackets -- the producers in our society were being hurt without being able clearly to identify why they were hurting. It was a form of economic Valium.

Financing larger and larger government spending through inflation, while seemingly a painless policy in the short run, in the long run has had far-reaching, insidious effects on the economy.

For the drug of inflation, while quietly filling the government's revenue coffers, causes enormous distortions in the economy and erodes incentives for individuals to work, to save, and to invest.

Let's see also how all this ties into interest rates. When the Federal Government finances a deficit by selling debt securities -- bonds -- it adds to the demand for credit in the financial markets. A deficit, therefore, is a kind of sponge, absorbing credit in the private financial markets, credit that could otherwise be available to private borrowers. Public borrowing to pay for deficits thus transfers to the public sector financial resources from the private sector, from businesses that would borrow to expand production, from farmers who would borrow to finance a tractor, or ranchers trying to build a herd.

That's why its so important to be moving downward with our deficits.

The second major area of the program is embodied in the new tax bill.

Lower tax rates, as well as other incentives written into the new law, such as depreciation reform, are designed to encourage savings and increase the pool of funds available to all borrowers in the financial markets.

First of all, for individuals, it provides a cumulative tax cut of 25 percent, across the board. It immediately reduces the top marginal rate on investment income from 70 percent to 50 percent, and it also lessens the marriage penalty.

And -- what's extremely important -- by indexing tax rates to inflation in 1985 and thereafter, it will prevent inflation from devouring future increases in earnings.

These are important changes for individuals, but no less dramatic are the provisions for business. In 1982 alone, business tax reductions will total more than \$10 billion. That amounts to a \$10 billion increase in business cash flow -- \$10 billion that business will not have to seek in the capital markets during 1982.

In 1983 the tax reduction act could conceivably reduce business borrowing by \$20 billion -- that's \$20 billion more that will be available for investment, that won't have to be borrowed.

The third feature of the President's program is an unprecedented regulatory reform and relief effort. Excessive government regulation also feeds inflationary fires by reducing the flexibility of the productive sectors of our society -- particularly agriculture and manufacturing -- to respond rapidly to changes in market conditions, to new opportunities or new obstacles.

The fourth and final feature involves moving away from the practice of earlier years when the money supply operated under a kind of feast or famine orientation, sometimes growing like topsey, and other times skrinking like Alice when she ate the magic candy. The country deserves and must have carefully metered growth in the money supply, one that suffers neither from an excess of caution or from a surfeit of panic.

With this program in place, we already are hearing the question: how is it working? First, I believe it is working. Secondly, keep in mind that success won't occur overnight.

We are dealing with the most complicated economy in the world, and one that has been shaped by over two decades of deficit spending, inflationary expectations, and government intervention. It is as if a tree had been grown with a wire holding it bent to the ground. After awhile, you can cut the wire, but the tree still will not spring up straight. It cannot. The trunk has been formed, or deformed, and it will take time before normal growth patterns resume.

As we succeed in reducing inflation, and we are, there is a period of time in which that very success contributes to the government deficit. Why? Because as the rate of inflation drops, the immediate effect is a reduction in the growth of nominal tax revenue. The government, for more than 20 years, has been using inflation to finance spending growth. As inflation declines, the government can no longer rely on the automatic revenue increases that inflation generates to bail it out of the consequences of past spending excesses.

Thus, while we have already taken measures to reduce government spending by \$130 billion over the next three years and to cut government's growth rate in half, the prospect of some budget deficit in the short term cannot be permitted to deter us from the beneficial effects that will be flowing from our programs of incentives for work, saving and investment.

What then is our reaction to the current recession, which is the logical outgrowth of high interest rates produced by past policies? Well, the standard response to the six recessions this country has encountered since 1950 has been to lunge for the panic button, setting off what is now an all too familiar chain of events: increasing government spending; consumption-oriented tax cuts; pushing through a variety of band-aid-type programs for individual sectors of the economy; and encouraging the Federal Reserve to speed up the printing presses.

I want to assure you in the strongest possible terms that such countproductive measures are not going to be part of this Administration's economic policies. That dreary set of events I just described are not part of a solution, but the essence of the problem. Those knee-jerk reactions lie at the root of today's deepseated, long-run economic problems. We know that. And we are not going to repeat them.

Thus, though I anticipate that there may be several more months of disappointing economic statistics, there are powerful forces already at work to transform current areas of weakness into sources of economic strength.

First and foremost, instead of the consumer-oriented tax relief provided when past recessions were practically over, the most massive tax reduction in the nation's history is already in place, and it is aimed at increasing production and investment -- supply not merely demand.

I might add in this regard that U.S. Chamber of Commerce Chairman Donald Kendall recently pointed out that if Congress had enacted these tax cuts back in February when the President first asked for them that "it is unlikely that we would be in the present situation."

Nonetheless, since the capital gains and business incentive cuts together with personal tax relief are already a reality, I believe the current recession will be mild, its end certain and swift.

A second powerful force working for a quick end to what will be a mild recession is the trend in interest rates. They are now coming down, particularly short-term rates. In some cases, such as commercial paper and 90 day CD's, they have fallen significantly from their earlier highs.

Lower interest rates will, of course, have a variety of positive impacts. More mortgage money should be available, with all that implies for residential construction and related industries. And certainly some of the pressure on farm incomes will ease.

Thus, as these forces make themselves felt, and as they combine with the four fundamental features of the President's program, I have no doubt that 1982 and subsequent years will show vigorous if not unprecedented economic growth.

From an international perspective, building a strong economy at home is the best help we can provide to other countries. America is a world economic leader. As such, our interest rates, our productivity, and our economic policies have a tremendous influence throughout the world.

At the economic summits in Ottawa and Cancun, and at the recent meetings of the World Bank and International Monetary Fund, President Reagan spelled out his economic policies clearly and deliberately. We want to maintain our foreign aid programs. We want to foster private sector economic growth. And we are beginning by putting our own house in order.

In terms of how successful we will be, there is only one cloud that I perceive on the horizon.

That cloud results from the fact that the cycle of economic change and the cycle of American patience are too often out of phase. Economic trends take time to turn. Public opinion often seems to travel from pole to pole at a gallop. But there is no powder we can mix with water to respond to demands for instant economic recovery. That is why the past policy of illusory prosperity through continual inflation has proven to be so alluring and habit-forming.

Already we see pressures building to alter the tax cuts gained after so much effort. Well, I can promise you that this President and this Administration are not going to back away from the tax rate cuts contained in the Economic Recovery Tax Act of 1981.

We live, thank God, in a democracy with all that means in terms of freedom and government accountability to public opinion. Of course, this also means that in the end the American people get the policies and brand of leadership they appear to ask for.

If people appear to be asking for a brand of government policy characterized by vacillation, loss of nerve, and a tendency to panic when the heat goes on, then Congress will respond and give the people exactly that.

I believe, the President believes, that the American people deserve better. They deserve a strong, steady hand at the wheel. They deserve leadership that tells them that expecting to harvest next week or next month what was only planted today is unrealistic, no matter how fertile the soil or potent the seed.

We are convinced that this nation is blessed in both human and economic terms with the most fertile soil on this planet. We have planted the proper seed, in the exact amount, at the right time. Let's not plow it under before it has a chance to sprout and grow. Let's be patient enough to remember the lesson of Ecclesiastes. "To everything there is a time to harvest."

The harvest is surely coming, and in an abundance that will confound the critics and amaze and gratify the American people. Let's give it its proper time.

#

J. Dawson Ahalt, Deputy Assistant Secretary
for Economics, USDA

1982 Agricultural Outlook Conference, Session # 2
Washington, D.C.

For Release: Monday, November 2, 1981



Introduction

A scant year ago, world agricultural prospects were the tightest in 5 or 6 years. Bad weather damaged crops in many areas, most severely in the United States, and prices were rising. It looked like economic recovery would boost demand and strengthen prices further.

Then a series of developments reversed this picture. Weather was favorable over the winter and spring of 1981. U.S. economic activity weakened after the first quarter, but interest rates rose beyond expectations. With widely favorable weather continuing this summer and fall, particularly in the United States, crop production has rebounded. Yet, sluggish global economic conditions still prevail. These developments have produced prospects much different from those of a year ago.

The agricultural outlook is currently dominated by abundant supplies. Prices are under pressure. Stocks are rebuilding sharply following reductions over the past year.

These circumstances, coupled with the impacts of high interest rates and rapid inflation, have made 1981 a difficult year financially for the Nation's farmers.

Going into 1982, supplies of farm products will continue to be large relative to demand in domestic and world markets. Yet developments in the weather, world economy, agricultural and trade policy, and other key areas could certainly modify this picture for better or worse.

For example, although we now have a good idea of the magnitude of 1981 Northern Hemisphere harvests, weather will still be influential in determining the outcome of Southern Hemisphere grain, oilseed, and other crops. As Northern Hemisphere farmers, especially in the United States, plant their crops next spring, expectations of 1982 harvests will also begin to affect supply prospects and prices.

Perhaps the most important variable in the agricultural outlook, barring unexpected weather developments, is the performance of the domestic and world economy. The United States is taking very strong steps to achieve a sustainable economic recovery. Many other governments are also moving to bring inflation under control and revitalize growth. These moves give us a basis for optimism that 1982 will be a better year in many nations. Even so, the extent and speed of recovery in world economic conditions will be crucial.

With this in mind, let's look at the highlights of the world and domestic agricultural situation and consider the variables that will come into play during 1982.

Current Situation

Some expansion in area and especially good weather have triggered strong increases in 1981 world production of grains, oilseeds, and fibers. Strikingly, most of this year's gains took place in the United States, where crop production jumped by 14 percent and livestock output expanded by 2 percent. Although U.S. farm exports should expand in the next 12 months to meet record needs, U.S. supply increases in feed grains, rice, oilseeds, and cotton are well ahead of projected use, pointing to sharp stock buildups.

Poor economic performance, both here and in most non-oil-exporting countries, is sharply accentuating the effects of large supplies on American farmers. Slack demand is both weighing on livestock product prices and moderating exports of farm commodities.

The export picture is especially complex. Not only have weak economic conditions and rapid inflation abroad cut into agricultural product demand, but the stronger dollar in 1981 has somewhat offset lower commodity prices, while high interest rates here and abroad have forced most users to buy on a hand to mouth basis.

High interest and inflation rates have affected farmers in other ways, by sharply raising the cost of storage and boosting farmers' outlays overall.

Faced with larger supplies and weak demand, farm prices have declined through 1981. Farm commodity prices this fall are about 6 percent lower than a year ago. Cash receipts from sales of crops and livestock for 1981 will be only modestly higher than last year, and are not expected to keep pace with farm production expenses, continuing the squeeze on cash incomes. However, because of larger commodity inventories this year, farm income after inventory adjustment may be a little better in 1981 than last year's \$19.9 billion.

Since the farm sector is far from homogeneous, the actual financial condition of individual farmers depend on the type of farming enterprise, other family income sources, and the cash flow and credit balance sheets of the farm business.

Undoubtedly, with farm production expenses rising faster than cash receipts now for the second year, some farmers are caught in a cash-flow squeeze. And borrowing to cover may be tougher for some, since credit availability is affected by the combination of record interest rates, low crop prices and slower rise in land values. Producers whose credit is already heavily extended may encounter the most problems, but all farm borrowers are paying record charges for money.

At the same time, there are some positive factors to consider. Equity per farm has appreciated by nearly \$80,000 since 1979. And income from nonfarm sources, which accounts for over 60 percent of farm family income, has continued to rise, easing the impact of low farm income in 1980 and 1981.

Factors Affecting the 1982 Outlook

Weather Developments. Turning now to some of the major variables in the 1982 outlook, recent global weather developments have generally favored crop production in the Northern Hemisphere. Southern Hemisphere weather has been more variable.

In the Northern Hemisphere, generally favorable fall moisture has aided the establishment of the new winter grain crops, except in India, where the summer monsoon stopped earlier than usual.

In the Southern Hemisphere, moisture continues generally favorable for most of Australia, but dryness has reduced potential wheat yields in northern wheat belts.

Argentina, now in a prolonged dry spell, has seen its wheat yield potential sharply reduced. Rain will be necessary to complete planting of spring crops in November, and timely rains will be essential thereafter because soil moisture is depleted.

In northern Brazil, recent summer rains benefited the previously dry coffee, corn, and soybean areas. But, with soil moisture reserves ranging from average to very limited, Brazil will need continued generous weekly rain to avoid yield losses. On balance, however, significant yield reductions are most likely in Argentina.

Planted Acreage. Farmers will base their planting decisions for 1982 crops on market expectations, their financial situation, and policy developments. The actual outcome and acreage mix, of course, will be influenced by planting-season weather. Our assessment at this early stage, is that U.S. farmers will plant slightly less wheat, especially in the Southeast, in response to the announced acreage reduction program. They are likely to put in more feed grains and sunflowers, while reducing soybean and cotton acreage a little.

Information about planting for 1982 crops elsewhere is still spotty. In Western Europe, precipitation has been favorable for winter grain prospects.

In the Soviet Union, the area of grains for 1982 harvest should increase to a more normal level. Last season's grain area was the smallest since 1972. With the Soviet planting season for winter grains just getting underway, the level of topsoil moisture crucial to earlier development is generally adequate. But good precipitation through fall and early winter will be essential to replenish depleted subsoil moisture levels.

Economic Developments. Economic prospects will play a key role in shaping the 1982 agricultural outlook. World economic activity should pick up somewhat next year. However, the outlook is still clouded by high interest rates, a large amount of unemployment, reduced rates of economic growth, higher prices for almost all goods and services, and a serious balance of payments deficit for most non-oil exporting countries.

In developed countries, GNP growth is likely to improve from 1981's sluggish 1.25-percent pace. We look for growth of around 2 percent next year, with most of the pickup likely in the second half. Japan will probably show the best performance and the United Kingdom the weakest. Economic growth, which has been poor in Western Europe in 1981, may recuperate to 2 percent.

Next year should prove a little better for the United States as we slowly recover from the poor economic performance of the past 18 to 24 months. We don't think the present recession will be very deep or very long. GNP is likely to grow about 2 percent for the year as a whole, with stronger growth during the second half. Real disposable income per person should gain about 2

percent, again mostly in the second half, lending some strength to farm product demand.

Economic growth in developing countries probably won't match historical rates next year. But there is great diversity. OPEC countries, for example, are trying to slow down their hectic pace of expansion. On the other hand, low-income developing countries have had some rough years since 1979. Many have drawn down reserves, suffered high debt-service ratios, and grown more dependent on external aid. Next year won't bring much improvement.

For a group of non-oil-exporting, but rapidly expanding developing countries, growth is likely to maintain its present fairly strong pace next year. Recent bouts with inflation have been met with restrictive monetary policies in some countries, with some success.

Trade with the Soviet Bloc. A major factor shaping agricultural trade prospects in 1982 will be developments in the Soviet bloc countries. Sales of U.S. grains and oilseeds to the Soviet Union in coming months will be an important market factor. Larger grain and protein imports will be critical in maintaining Soviet livestock numbers. The level of livestock numbers is a key element in longer term trade prospects with the United States.

For the third consecutive year, poor weather cut deeply into Russian grain production. We project that Soviet grain imports, which have grown without fail in recent years, may reach an unprecedented 43 million tons. The United States recently negotiated sales of up to 23 million tons of grain to the Soviets under the last year of our long-term bilateral grain agreement. So far the Soviets have purchased 4.3 million tons of wheat and an equal amount of coarse grains in this sixth agreement year that ends with September 1982.

The sensitivity to overall food availability in Eastern Europe has been heightened by a smaller total grain harvest, burdensome debt service commitments, and in Poland, continuing political and economic difficulties. Tight food supplies have made rationing measures necessary in Poland and more recently Romania. No decision has yet been made by the U.S. Government on Commodity Credit Corporation loan guarantees to four eligible East European countries.

Policy Changes. Agricultural and trade policy decisions, both here and abroad, will greatly influence the impact of adjustments to current large supplies and sagging economic conditions.

In order to help bolster grain markets, the Secretary has already opened the farmer-owned grain reserve to 1981-crop wheat and feed grains.

Consideration of new farm legislation to replace the expiring Food and Agriculture Act of 1977 is still underway. Congressional debate continued after passage of two laws of great potential significance to agriculture, the Omnibus Budget Reconciliation Bill of 1981 and the Economic Recovery Tax Act of 1981. The first law signaled a redirection of Federal spending policy after years of rapid growth; the second enacted many tax reforms of importance to farmers. Both are key to the Administration's economic recovery program.

Farmers will reap the benefits of new tax provisions for lower personal and corporate income tax rates, more rapid depreciation timetables, encouragement of equipment leasing, and liberalization of inheritance tax provisions.

At the same time, they will benefit from the added savings and investment that the tax package will generate.

Congress has been considering new farm legislation at a time when every program in Federal Government is being closely scrutinized for cost and effectiveness. Although the final provisions of the new farm bill are not known at this date, it is likely that dairy support prices will hold steady through fiscal 1982 and rise much more modestly in the future in an effort to try to bring milk production into better balance with consumption. However, we will have to wait until the conferees complete their work this week to know the final provisions for dairy and the other commodities.

World Grain Prospects

Let's take a look now at some highlights of the outlook for major commodities.

Record global crops of wheat, coarse grains, and rice this season are leading to a 4-percent increase in world grain output. The increase comes largely from the United States, and is expected to boost total supplies for 1981/82 by around 2 percent. These large supplies, coupled with a continued large world output of animal products and some recovery in global economic activity, will help provide at least modest advance in consumption.

World grain stocks at the close of 1981/82 are likely to recover sharply from the previous season, and about match the large 1979/80 levels. This suggests ending stocks equal to about 13 percent of annual consumption. Three-fourths of the stock increase will likely take place in the United States, which holds about two-fifths of the world's grain stocks.

Coarse Grains

Coarse grains are providing most of the expansion in global grain supplies, trade, and stocks in 1981/82. Current estimates point to a 5-percent increase in the world's coarse grain crops to 767 million tons. A record U.S. crop is more than offsetting poorer crops in the Soviet Union and Western Europe. Prospects are mixed for other exporters. Canada has record output and Australia's crop will recover from last year's drought-reduced level, but smaller crops are likely in Argentina and South Africa.

After two flat years, world coarse grain consumption may rise modestly, mostly reflecting greater usage expected in the United States. Reduced foreign crops and increased consumption could boost world trade by 6 percent to a record 111 million tons, with the Soviets alone projected to import 24 million.

Even with increased consumption, world coarse grain stocks may rise by one-fifth, virtually all in the United States.

The U.S. coarse grain crop may total 246 million tons, a fourth above last year, mostly because of sharply higher corn yields. Even with a much smaller carryin, total U.S. 1981/82 coarse grain supplies will be 12 percent larger than last season.

Domestic coarse grain use may increase 7 percent, thanks to expected pickup in fed cattle and broiler output and more normal winter temperatures, which would increase feeding rates from those of last winter. What's more,

U.S. exports should increase by over a tenth, to 74 million tons. Even so, our coarse grain ending stocks are likely to rise sharply to 50 million tons. We expect about half of this to be isolated from the market in the farmer-owned reserve and CCC inventory.

U.S. corn prices fell to around \$2.50 in October, and for the 1981 crop year may average between \$2.60 and \$2.90 per bushel, down from the record \$3.10 average for the 1980 crop.

Food Grains

In contrast to the concern over a big buildup in world coarse grain stocks, coming from record U.S. feed grain crops, the world and U.S. wheat picture is much brighter.

We forecast a 2-percent gain in world wheat production this year, with sharp gains in some major exporting countries more than offsetting smaller crops in Western and Eastern Europe and the Soviet Union. Even with reduced availability and use in the Soviet Union, global wheat usage is holding to the level of the last 2 years. Although U.S. wheat stocks are expected to fall slightly, there may be only a small stocks buildup in the rest of the world.

World trade in wheat may jump by one-tenth to a record 103 million tons. Major stimulants will be huge Soviet imports, reentry of India into the world market, and larger import needs in Egypt, Brazil, South Korea, and other rapid growth developing countries.

U.S. wheat producers harvested 16 percent more this year, turning out a record 2.75 billion bushels. However, with both domestic use and exports expected to rise, stocks are likely to fall below last season's level.

Larger supplies and lower prices encouraged wheat feeding earlier this season and are helping boost total domestic use. Additionally, strong export demand is expected to push U.S. wheat exports ahead by almost one-fourth, to a new high of 1.9 billion bushels.

Early season farm wheat prices have been down, but allowing for increases in coming months, 1981/82 prices could average between \$3.85 per bushel and last season's \$3.96.

World rice production in 1981/82 could rise by 3 percent because of widespread favorable weather. Production could reach a record 408 million tons, on a rough basis. Larger supplies and continued population growth will maintain the uptrend in consumption. Trade during the next calendar year, however, will slacken. World rice stocks are accumulating, primarily in the United States.

U.S. rice production will rise nearly a fourth to 5.9 million tons (milled basis) reflecting new highs for both acreage and yield. Smaller carryin stocks will moderate the increase in overall supplies, but exports are likely to lag by as much as a tenth. Carryover stocks will likely reach an unprecedented 1.8 million tons.

Rice prices have slipped as crop prospects have increased and may average \$9 to \$11 per hundredweight in 1981/82, off from \$12 last season.

Oilseeds

World oilseed production for 1981/82 is expected to be up about 9 percent to 176 million tons. With carryover stocks in major exporting countries only slightly below the previous year's record highs, and with a sluggish world economy, use of oilseeds and products will lag the increase in supply, and stocks will build further.

Larger U.S. oilseed crops, especially soybeans, have increased U.S. oilseed supplies from the drought-reduced 1980/81 level to an estimated 77.1 million tons, nearly matching the 1979/80 record.

U.S. soybean production is forecast to jump 15 percent to 2.1 billion bushels, boosting total supplies to 2.3 billion bushels. While use could rise by 9 percent, reflecting stronger domestic crush and exports, record carryout stocks of 420 million bushels would remain.

U.S. soybean and product prices are currently under pressure, although improved export prospects could help later on. Even so, soybean prices are expected to average between \$5.50 and \$7.00 per bushel for 1981/82, compared with \$7.61 last season.

Livestock Prospects

World meat output in 1982 is likely to be near the 1981 level. Poultry will remain on its long uptrend, but the increase will be much slower than that of the last few years. Beef and pork output will be about unchanged. On a per capita basis, however, this means another year of decline.

U.S. meat output in 1982 should remain near the high 1981 level, with more beef, veal, and poultry but less pork. Next year may be a little more favorable than the last two, when constrained consumer budgets held down livestock and poultry prices. But most of the improvement expected next year will come in the last half of the year.

Large feed grain and oilseed crops this fall mean lower cost feed well into next year. However, they will also encourage a high level of meat output that may prove burdensome from the producer's point of view, especially if demand doesn't rally.

Most of this year's 2-percent increase in beef production is from the nonfed sector. But cattle feeding is likely to begin picking up this fall. Since nonfed slaughter is likely to remain large, total beef output could increase 2 to 4 percent in 1982.

This year, Choice fed steer prices are expected to average a little lower than in 1980. Next year, prices are likely to strengthen modestly, as the economy improves in the second half.

Pork production may drop 4 to 6 percent next year, following a 6-percent decline in 1981. The larger part of the decline will occur in the first half. Then, as producers respond to lower feed costs, output may build to near year-earlier levels by late 1982. For the year, barrow and gilt prices may average in the mid and upper \$40 range compared with an expected average \$46 this year.

Large poultry output has held prices down this year. But even with larger broiler production, we look for 1981 broiler prices to average near the 1980 level. A strong export market for broilers has been a price-strengthening factor. Broiler meat exports, which jumped by 40 percent last year, were up 43 percent through August of this year. Turkey prices, on the other hand, may be down about 3 cents per pound as cold storage stocks have become burdensome.

For 1982, a limited increase in broiler production, coupled with anticipated strong export demand, is expected to result in some price increase. Burdensome cold storage turkey stocks are expected to be carried over, preventing a price increase in the first half, but prospects could pick up later as stocks are worked off and production reduced.

Dairy Prospects

Milk output will probably be up about 3 percent in 1981, boosted by both a larger herd and increased output per cow. With milk output well ahead of commercial use, the Government has made substantial purchases of dairy products.

The 1982 dairy outlook is still riddled with question marks, including the Federal support price level and farmers' response to it. Congress' long delay in completing new farm legislation has created regrettable uncertainty in a market that needs some very consistent signals right now.

Milk cow numbers remain larger than a year ago, and a large number of replacement heifers are available. Even if supports are not increased in 1982, milk output will continue to top year-earlier levels, at least through mid-year. Reduced off-farm employment opportunities for dairy farmers and lower feed prices in the face of depressed cull cow prices limit producer alternatives.

Commercial use of milk is expected to increase next year, especially if the milk support price does not increase, but disappearance is not likely to keep pace with expanding production through next spring, suggesting that large Government purchases will continue.

Cotton

The 1981/82 world cotton situation is highlighted by record production, sluggish consumption, rising stocks, and weaker prices. Global production is forecast to rise by 5.5 million bales to 70.9 million, but mill use may gain only 1.5 million bales, adding over 3 million bales to ending stocks next summer.

The U.S. cotton outlook mirrors this situation, with forecast production of 15.5 million bales more than 2 million above total use. Competitive prices will contribute to a 5-percent gain in mill use exports of 7 million bales, up a fifth. Yet stocks may double to around 5 million bales.

Domestic and world prices have weakened substantially. U.S. farm prices are now below the target price of 70.87 cents per pound, indicating possible deficiency payments on calendar year 1981 sales.

Sugar

We expect record 1981/82 world sugar production, currently estimated at 95.8 million tons. Consumption will rise, too, but not enough to prevent a major stock increase.

With large 1981 U.S. cane and beet sugar production, 1981/82 output could rise about 7 percent to 6.2 million short tons, on a raw-value basis. Sugar production prospects for 1982 will depend on the level of world prices, which have dropped precipitously from 1980 highs, whether or not a sugar program is legislated, and competition from high fructose corn sweeteners, which continues to expand rapidly.

The world raw sugar price reported by the International Sugar Organization averaged below 12 cents a pound in September, sharply under last September's 35 cents. Some rise can be expected in 1982, if new crop sugar production does not increase much.

However, market prices will still be too low to maintain U.S. planted acreage, which will likely drop considerably. Assuming yields return to average levels from 1981/82 highs, U.S. sugar output in 1982/83 could drop 10 to 15 percent.

Imports of raw sugar are likely to drop next year, in part because U.S. sugar exports, close to a million tons in the current year, will drop sharply and could even be negligible. Domestic sugar consumption is expected to fall about 200,000 tons, to 9.6 million tons in 1982. The final outcome on sugar legislation could have important market impacts.

Agricultural Trade Prospects

In the last quarter of fiscal year 1981, July-September, U.S. agricultural exports slowed significantly from the year-earlier pace. Export volume for all of fiscal year 1981 was an estimated 163 million tons, no larger than in fiscal year 1980. The fiscal year farm export value at \$43.8 billion was a little lower than anticipated, but more than \$3 billion ahead of the previous year's record. U.S. agricultural imports have also slowed recently, mainly due to lower coffee prices. Fiscal year 1981 imports probably were close to the \$17.3 billion of the previous year.

World agricultural trade in fiscal year 1982 will increase because of lower prices and larger exportable supplies of most commodities, heightened grain import needs, notably in the Soviet Union and India, and limited gains in oilseed production outside the United States.

U.S. farm export volume could rise 5 to 10 percent, as record shipments of wheat are augmented by recovery in corn, soybean, cotton, and tobacco shipments. Volume gains may more than offset a likely decline in the overall price level, to boost the value of U.S. agricultural exports 3 to 5 percent for the year.

Farm Income for 1982

The net farm income outlook for 1982 at this time is highly volatile. Current prospects could be aggravated in coming months by large crops in the Southern Hemisphere and weak economic conditions throughout the world. Large 1982/83 crops would further compound a large supply situation. In contrast,

if Southern Hemisphere crops are sharply reduced, if foreign buyers begin to aggressively bid for available supplies, and if world economic conditions improve dramatically in late 1982 in the face of small 1982/83 crops, a much stronger income picture would emerge. The magnitude of potential swings in inventories and prices under such conditions are large and will be a key determinant of the level of 1982 net farm income. Without knowing the level of 1982/83 U.S. commodity output or the potential usage based on world crop developments and economic conditions, the magnitude of the swings in commodity prices and inventories make any forecast at this time highly tentative.

Despite the uncertainties, there is little evidence at this time for predicting a good year for farm income in 1982. It would seem quite likely that cash income could be down another \$1 to \$3 billion and net farm income may be further reduced by inventory adjustments reflecting 1982/83 crop developments.

Food Price Prospects

Food prices moderated in 1981. We are forecasting a rise of more than 8 percent for the year but less than the 8.6 percent increase of 1980. Higher marketing charges are contributing two-thirds of this year's food price increase. Higher farm prices account for one-sixth, and higher prices for imported foods and fish, the rest.

A preliminary look at 1982 suggests that retail food prices may average somewhere between 5 and 9 percent higher for the year. Prices of food consumed away from home in restaurants, cafeterias, and institutions may increase about a twelfth, a little slower than in 1981, and grocery store food prices may rise on the order of 5 to 8 percent.

The rise in grocery store food prices will be tempered by large supplies of farm foods. Most livestock foods except perhaps pork will be abundant, moderating price increases for these foods.

Smaller harvests of both citrus and noncitrus fruit this fall and winter will raise prices at the grocery store, but a large potato crop will reduce fresh vegetable prices. Overall retail price increases for processed fruits and vegetables during 1982 may well prove moderate.

Adding in the price effects of abundant harvests of vegetable oils, grains and sugar, the farm value of domestically consumed foods may rise very modestly. Thus, more rapidly rising food marketing costs will provide most of the impetus for higher food prices. Even so, economic conditions, especially slowing inflation and high unemployment, coupled with less rapid inflation in energy prices, point to a slowing in selected food processing and marketing cost components.

Earl Johnson, Federal Trade Commission

1982 Agricultural Outlook Conference, Session #3
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In opening, let me emphasize that the views I express here today are my own and they should not be construed as representative of official Commission policy.

In these days of conscientious family budgeting, the best way to ensure a good buy is to know as much as you can about the product you are buying. This is particularly true for wearing apparel and household textile items. The sophistication of fiber blending, fabric construction, and use of new dyes and finishes makes it impossible for the consumer to make an intelligent purchasing decision without being informed about fiber content and care characteristics.

As most of you know, as far back as 1939, Congress passed The Wool Products Labeling Act requiring any products containing wool to have a label revealing the percentage of each type of fiber in the product and identifying the wool as new, reprocessed or reused. Only recently, in July 1980, Congress amended this rule to combine the two terms "reprocessed" and "reused" into a single term "recycled". One explanation for this change was that consumers did not understand the meaning of the two terms and "recycled" has taken on more meaning for the consumer in recent years.

The Flammable Fabrics Act was passed by Congress in 1953 prohibiting the sale of any wearing apparel or fabric which is so highly flammable as to be dangerous when worn by individuals. Through the years, as this Act has been modified and broadened to include interior furnishings, fire retardency treatment has been recognized and special care labeling is required to prevent removal of the retardency feature.

In 1959, Congress passed the Textile Fiber Products Identification Act requiring all household textile articles to have a label identifying by percentage all fibers in the article. No changes have been made to this Act but as an interesting aside, during the Senate Hearings, several opponents argued that consumers need to be advised as to the care and maintenance of textiles rather than fiber content. This brings me to my main theme.

But first, I have given this brief review of Congressional Acts affecting textiles so as to clearly identify those rules that originate from legislation as distinguished from the Federal Trade Commission's authority to issue Trade Regulation Rules. Under the

FTC Act, the Commission is, in part, empowered and directed to prevent unfair or deceptive acts or practices in or affecting commerce. As a consequence of this responsibility, in November 1969, the Commission published a proposal to require permanent labeling on household textile articles. The proposal was based on many letters from consumers complaining that they were unable to determine proper care procedures for textile products they had purchased. In fact, when attempting to use traditional care methods on many products, substantial damage occurred.

At that time the rulemaking procedure was quite basic. Written comments were submitted by interested members of the textile industry, various individuals and consumer groups. Several days of hearings were held at which oral testimony was taken. Then the staff summarized the record and made recommendations for the final rule to the Commission. Thus, in December 1971, the final and current care labeling rule was promulgated stating that it was an unfair or deceptive act or practice to sell wearing apparel without a permanent label disclosing instructions for the care and maintenance of the article.

When issuing the rule, the Commission identified as deceptive the failure to reveal care instructions when silence on the subject misleads the public into using a care procedure which impairs the utility or appearance of the product. The failure to give care instructions was also found to be deceptive when such silence frustrates the basic assumption at time of initial purchase - that no special and costly maintenance will be required and therefore the consumer will be able to identify and use the care procedure which is both most effective and economical. Finally, the Commission stated it was also unfair to withhold information essential to the ordinary use of the product. This finding was based on evidence that many consumers experience substantial economic loss because of erroneous assumptions about care of wearing apparel, assumptions which are quite normal in the absence of contrary instructions from the manufacturer.

The coverage of this initial rule was specifically limited to wearing apparel and piece goods for making wearing apparel. The record had identified this part of the industry as the most pressing area in need of care labeling. Additionally, the Commission wanted to move into the care labeling area in stages. The Commission did emphasize, however, that it reserved the right to consider the addition of other products at a later date.

In April 1974, in response to numerous inquiries and to numerous requests to expand coverage and to make requirements more specific and thus more responsive to consumer needs, the Commission published a Request for Comment. The request sought information on a wide variety of care labeling issues. Over 9000 comments were received. A large majority indicated they were receiving labels on garments but

the labels were not permanent, they were unclear and often inaccurate. In addition, an even larger majority urged that the rule coverage be extended to leather apparel, upholstered furniture, carpets and rugs, linens, curtains and draperies, slipcovers, yarn and all piece goods.

In response to these comments, the Commission, in January 1976, published a proposed amendment to the current care labeling rule which proposed, 1. coverage of leather garments and all household textile products, 2. a more complete instruction for washing and drycleaning, and 3. the use of the standardized terminology contained in a glossary developed by the American Society for Testing and Materials (ASTM). Although testing was not proposed, the question of how best to insure accuracy of the care instruction was raised as an issue for discussion.

At the time the proposed amendment was published, the Federal Trade Commission Improvements Act of 1975 was in effect which prescribed new rulemaking procedures to be followed by the Commission. In addition to the normal notice of proposed rulemaking and opportunity to submit written data, views and arguments, an informal hearing is now required. At this hearing, disputed issues are identified, interested parties may orally present their views, limited cross examination is permitted and rebuttal submissions are then accepted. A verbatim transcript is taken and made a part of the public record.

Between January and September 1976, five thousand comments were received centering primarily on what new products should be covered and how care instructions could be given more clearly and reliably. From these comments, the Presiding Officer identified and published designated issues of fact. Prior to the hearings, group representatives were designated and given the right to examine witnesses and to cross-examine those witnesses on designated issues. Public hearings were held for two weeks in Washington and for one week in Los Angeles. Thereafter, all interested persons were allowed to submit written rebuttal statements.

The Presiding Officer then prepared a report, making his recommendations based on the evidence received. This was followed by the staff report, which analyzed the record and made recommendations to the Commission for a final rule. These reports were then published and public comment was invited for the period June to September 1978.

In July 1979 certain of the parties who previously participated in the proceeding were permitted to make oral presentations to the full Commission. The total rulemaking record was then reviewed by the Commission to determine what form of rule, if any, should be issued. At that time, the Commission made tentative decisions as to the substance of the final rule and instructed the staff to prepare a final draft of the rule and a statement of basis and purpose. By law, this statement must include a statement as to the prevalence of the acts or practices treated by the rule, a statement as to the manner and context in which such acts or practices are unfair or

deceptive and a statement as to the economic effect of the rule taking into account the effect on small businesses and consumers.

I did not mean to belabor you with these rulemaking procedures but I did want to illustrate the many opportunities that are offered to participate in the formulation of a rule. I feel this is particularly important to a group such as is present today when the rule is one that so closely impacts on family economy. Many members of this group have participated in this rule and we appreciate the extremely helpful views and testimony that you have provided.

The last publication of the proposed amendment was made on January 5 of this year in which the Commission invited comments on the extent to which the language chosen was suited to achieving the Commission's stated intentions in the rule. The notice pointed out that when the comment period ended, the Commission would make any appropriate changes, promulgate the final amendment and set an effective date that provides for a period of Congressional review as required by the Federal Trade Commission Improvement Act of 1980.

Thus, although this care labeling amendment is well along the way, the 1980 Improvements Act added two important features to the proceedings. Congress now requires the Commission to issue a regulatory analysis with each rule, which is essentially a benefit-cost analysis. In addition, after promulgation of the final rule, the Commission must submit it for review to each House of the Congress for a 90-day period.

In concluding, I would like to inform you that the proposed final amendment and the draft statement of basis and purpose and regulatory analysis are all in the last stages of review before being presented to the Commission for its review.

Briefly, I will summarize the proposed amendment as it was last published in January.

The amendment proposes coverage of leather and suede wearing apparel and textile products in the form of wearing apparel, linens, curtains and draperies, slipcovers, yarn, piece goods, upholstered furniture and carpet and rugs.

Washing instructions would now have to include a method of washing, a method of drying, and include an ironing instruction, when necessary. If hot temperatures can not be used in each method, then an appropriate temperature must be given. In addition, if all commercial bleaches cannot be used, then a warning must be included that states not to use bleach or only use non-chlorine bleach, when necessary.

Thus, an instruction that said "Machine Wash Warm, Tumble Dry Warm, Only Nonchlorine bleach when needed" would mean the article could be washed and dried by machine but only warm temperatures should be used, no ironing is necessary and chlorine bleach should not be used but nonchlorine bleach is safe for use when needed.

The instruction "dry clean" would mean any drycleaning solvent can be used and the normal process of drycleaning in a coin-operated machine or used by the drycleaner is safe. If this is not true, the instructions must show what solvent(s) to use and what modifications to the process are necessary. As an example, a care instruction may say "dryclean, fluorocarbon. Do not steam". This would indicate that the solvent fluorocarbon should be used and steam pressing or finishing should not be used, steam pressing being a part of the normal process.

Care instructions for upholstered furniture and carpets and rugs would have to contain at least one cleaning method and one cleaning agent that was appropriate for use. The instruction will also indicate whether the consumer can accomplish the cleaning or that it should be done by a professional.

To ensure clarity and consistency of meaning for the instructions being used, a glossary of standard care terms will be utilized. Terms for use on upholstered furniture and carpets and rugs have not, to date, become a part of the glossary. However, the D-13 committee for textiles in ASTM is actively working to develop appropriate terms that will clearly be understood by the consumer.

Finally, to ensure accuracy of the care instructions in the future, the amendment would require all manufacturers and importers to have proof that they can reasonably trust for all care information on their labels.

Arthur Garel, Director, Office of Textiles and Apparel
U.S. Department of Commerce

1982 Agricultural Outlook Conference, Session #3

For Release: Monday, November 2, 1981



My topic for today is international trade agreements, but I feel that any discussion at an "Outlook Conference" should also deal, at least to some extent, with the outlook for the industry.

I would like to spend just a few minutes on where we are in 1981 before addressing the 1982 outlook for textiles and apparel and the topic of international trade agreements.

The textiles situation has been declining since 1979. A strong export market has been the only bright light over the past two years. Industry shipments increased by approximately 7 percent in 1980 and 3.7 percent in 1981 in current dollars. The constant dollars (1972=100) industry output declined 2.5 percent in 1980 and another 5.3 percent in 1981 despite strong export growth in both years. The most heavily impacted sectors of the textile industry were those associated with durable purchases. Carpets and rugs and other home furnishings declined substantially as the construction and automotive industries suffered severe setbacks. But within the sectors of the industry which supply apparel producers, the story was slightly better. Wool yarn and fabric producers increased output in 1981 for the first time since 1978 -- this is an indication that the consumer is trading up to higher quality goods.

Total employment in the textile industry declined 4 percent in both 1980 and is expected to decline another 2 percent in 1981 to approximately 792,400 employees. However, the industry has also become more efficient as older equipment is retired first and newer high speed equipment is installed. For example, man-made fiber fabric weaving loom output increased from 16 thousand square yards per loom in the second quarter of 1980 to 17.2 thousand square yards by the second quarter of 1981.

Value of apparel shipments will reach \$50.7 billion by the end of 1981, a 9 percent increase from 1980. The trade deficit for cotton, wool and man-made fiber apparel will widen to about 5.4 billion dollars as the value of apparel exports is expected to increase by 10 percent and the value of apparel imports by 14 percent.

The apparel industry is made up of about 15,000 firms most of which are small. Apparel is one of the least concentrated industries in the United States and is subject to a high degree of competition. Employment in the apparel industry will decline by approximately 1 percent to 1,257,000 employees. The number of production workers will fall by 1.4 percent or 10,600 workers.

Apparel prices have been increasing. The producer price index for apparel will rise about 8.2 percent during 1981 compared to an estimated 10.2 percent increase in the producer price index for all commodities. However, the consumer price index for apparel less footwear will probably rise only 4.1 percent while the consumer price index for all items could rise by as much as 10.6 percent.

A few segments of the industry fared much better both in 1980 and 1981. Most notable were those industries that produce coats and suits, whether for men and boys or women and girls. In a depressed economy consumers often postpone durable goods purchases. This allows more disposable income for purchases of nondurables such as apparel. During the last two years unlike during previous periods of economic difficulties consumers have been "trading up" by buying better suits and coats. During inflationary periods, high quality garments styled conservatively are considered good investments. How long this trend will continue depends on the performance of and the consumer reaction to the general economy.

There are many variables that affect the outlook for the textile and apparel industry, most importantly, the state of the general economy. How the industry consumer will react to inflation, interest rates, tax incentives, and personal income tax cuts are a few factors that must be taken into consideration.

Over the past couple of years apparel has been among the best buys. In our inflationary economy, apparel prices have risen much more slowly than prices of all other products. It is this lower inflationary rate for both textiles and apparel which has permitted a real increase in consumer expenditures for apparel as a percent of PCE (personal consumption expenditures).

Prices for apparel in the United States are going up much more slowly than for these countries in Europe. Using 1970 as the base year, the CPI for Italy has gone to 184.9 in 1979, 216.7 for France, 177.7 for Belgium, 251.9 for the United Kingdom, and over 200 for

the Netherlands, compared with 136.2 for the United States. It is this lower inflationary rate which has played a large part in the substantial increase in apparel exports to Europe.

Interest rates have affected both the production and purchase of textile and apparel products. Firms all through the pipeline have attempted to offset the burden of high interest rates by cutting existing inventories and reducing order lead time.

Inventories have been trimmed to the bone and production has been cut back to almost an "as needed" basis. Companies are more cautious all through the production pipeline. The retailers, who are the greatest risk takers in the soft goods industry, have severely cut back the time span they are willing to project and, therefore, order into the future. Backlog of unfilled orders for apparel manufacturers and, in turn, textile producers have fallen substantially. Because unfilled orders to inventory ratios are one of the major inputs into the production decision, inventories in these industries, trimmed once by high carrying costs, have been slashed again by low order levels. This process has worked its way back to the fiber producers at the beginning of the pipeline. Textile manufacturers who used to maintain a six week supply in inventories have cut back to less than three weeks.

Many manufacturers believe that this experience may make them better businessmen, both in the future as well as the present, they will manage tighter inventories and adapt to shorter ordering lead time and closer production to shipment schedules. There is some

belief that those who cannot manage these changes will face a difficult time over the next few years.

This improvement of managerial efficiency should lead to more efficient production techniques. The lessening of lead times will increase the demand for technology which can adjust to quick production needs. A decline in interest rates, together with accelerated depreciation schedules, in the long run should result in greater investment for more efficient production.

High interest rates have forced consumers to postpone purchases of durable goods. This has adversely impacted the textile home furnishings and automotive sectors. Should the personal income tax cut stimulate savings as hoped, interest rates should fall, stimulating demand for durable goods. This, in turn, should improve the outlook on the home furnishings and automotive sectors.

There is no sure guarantee, however, that the tax cut will go into savings. If consumers choose to spend this extra income, this would apply pressure for interest rates to remain high. As a result, present consumer purchasing patterns could continue, that is postponement of purchases of durable goods and increased spending on nondurable goods and services.

Certainly, the high degree of competition will continue and clothing should remain a comparatively good buy in 1982.

Let's go now to a discussion on international trade agreements, I think it might be useful to start by telling you a bit about how the textile and apparel import program works. We have a multifiber international agreement which has been negotiated under the aegis of

the General Agreement on Tariffs and Trade (GATT). Commonly known as the MFA, it began on January 1, 1974, was extended in 1977, and is scheduled to expire at the end of this year.

No imports are restrained under the MFA. This international agreement provides the framework, that is, the ground rules, under which individual importing countries may restrain disruptive imports by bilateral agreement with the exporting countries or by unilateral action. The theme of the MFA is restrained growth, with the importing countries interested mainly in the restraints and the exporting countries interested in growth of exports. The MFA offers the exporting countries some protection against arbitrary action by importing nations and guarantees certain rights, including minimum growth. Under the MFA, the United States has negotiated 25 bilateral agreements with 24 nations. Twelve of these will expire in 1982 and must be renegotiated.

Under an executive order, the textile program is administered by the Committee for the Implementation of Textile Agreements (CITA), which is chaired by an official of the Department of Commerce and is comprised of other officials from the Departments of State, Labor and Treasury. The United States Trade Representative is a non-voting member.

Negotiations are conducted by the Chief Textile Negotiator, who is from the Office of the U.S. Trade Representative. Members of the delegations include the Departments of Commerce, State, Labor and occasionally Treasury.

It is now clear that the negotiations for renewal of the MFA will be more difficult than they were in the 1977 renewal.

On one hand, we face a coalition of exporting countries with determined and unified positions on any dilution of their rights as they see them under the original MFA. On the other hand, we face the inability of the EEC to come up with a reasonable mandate for negotiations. Unless we can bridge these extremes with a moderate and reasonable approach that all sides will view as fair, there may be no MFA in 1982.

So far we have had three rounds of discussions with our trading partners in the GATT Textiles Committee in Geneva. In addition, we have had numerous bilateral consultations in the attempt to find an equitable middle ground.

Our major needs in a renewed MFA are clear. Our three major suppliers -- Hong Kong, Korea and Taiwan -- supply nearly two thirds of our controlled imports. Their quota limits are very large in the most sensitive apparel categories. These limits are so large that the growth and swing between categories available to them each year represent the equivalent of a fourth largest supplier for these categories as a group. Their growth in any year is larger than the total quotas of some of our bilateral partners.

Our main problem therefore is our three major bilateral partners and how their growth and flexibility affect our market. In the renewed MFA we need the tools necessary to allow us to hold down these largest suppliers -- they are the source of our major problems.

As I mentioned previously, our bilateral understandings are the key to effective prevention of domestic market disruption. Virtually all of our most significant bilateral agreements expire in 1982, including those with Hong Kong, Korea and Taiwan. The terms of renewal of the MFA will have quick and direct application at the bilateral level next year.

Although the picture for renewal of the MFA does not look good at this stage, I am hopeful that the MFA will be renewed. Both importing and exporting countries recognize the need for a MFA. Although the MFA is by no means a perfect instrument, it has served a very useful purpose. The industries of most countries may complain but they recognize that conditions may be worse without this international agreement.

If the MFA is not renewed we are likely to return to the chaotic trade picture which existed previously, with the exporting countries disrupting the markets of importers and the importing nations taking drastic unilateral actions against imports.

This is a situation which everyone wants to avoid.

Hopefully the common market countries will be able finally to reach a reasonable mandate for negotiations and starting in mid-November, when the GATT Textiles Committee reconvenes, we can sit down with all countries and reach a mutually satisfactory conclusion.

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Research in the area of textiles and clothing covers a breadth of both the behavioral and physical sciences, and encompasses applied and some basic research. To begin to gain a perspective on the research outlook, it is first necessary to examine where researchers in this area are currently directing their efforts. This paper will address: current research in textiles and clothing, research trends drawn from data on current research, and a projection for future directions for research in textiles and clothing.

Current Research in Textiles and Clothing

In preparation for this report, 40 departments in the area of textiles and clothing were contacted for information on their current research projects. The departments contacted were selected on the basis of previous research reputation in the area and included universities throughout the United States. Twenty-eight departments responded by the designated deadline, 25 submitting reports which were used in this analysis. One hundred forty six projects were reported in total. (Table 1)

Table 1

TEXTILES AND CLOTHING DEPARTMENT RESEARCH SURVEY

Institutions Reporting Research	Number Reported in Clothing	Number Reported in Textiles
Auburn University	2	3
California State Univ.-Long Beach	1	-
Colorado State University	6	1
Florida State University	5	4
Iowa State University	7	4
Kansas State University	-	11
Louisiana Tech University	2	-
Miami University of Ohio	1	1
Michigan State University	14	3
Ohio State University	-	3
Queens College	1	-
University of Akron	1	-
University of Arizona	7	4
University of Delaware	1	-
University of Georgia	2	12
University of Iowa	7	2
University of Kentucky	2	2
University of Missouri-Columbia	10	2
University of Nebraska	2	3
University of Nevada	2	1
University of Tennessee	4	5
University of Texas-Austin	3	-
University of Vermont	1	1
University of Wisconsin	1	6
Winthrop College	-	1

Of the 79 reported in the general category of clothing, 21 projects or 26% of the research in this area was funded. Funding from the Agricultural Experiment Station accounted for 12 projects, with studies related to special needs and economics representing the largest number in this category. Internal university funding was obtained for 5 projects and outside funding for 4 projects.

Thirty three projects, or 48% of the 68 projects reported in the textiles category, were funded. Eighteen of these projects were AES funded, with textile chemistry projects representing the major area. Internal university funding was obtained for 7 projects and outside funding for 8 projects.

Observation of the areas of research within the two major categories indicates program emphases. This information, compared with the researchable problem areas identified in the Home Economics Research and Assessment Planning Projections Report (HERAPP 1978), provides insight on the outlook of research in textiles and clothing.

Research Trends and Future Directions

Clothing Research Areas

The overall objective of research in the social psychological area is "to investigate the contributions that clothing makes to the self-concept and to human interaction throughout life." (HERAPP 1978) Over the years, emphasis has been placed upon instrument development and analysis of methods capable of analyzing multiple variables. The target audience for research has rested heavily upon adolescents because of the availability of the group for research purposes and the composition of the total population.

The current research studies examined focus on the occupational setting. (Table 2) The shift of the population, and the importance placed on dual career families can help to account for this target audience shift. Continued research on methodological approach can be incorporated by

Table 2
SOCIAL/PSYCHOLOGICAL

Adolescence

1. leadership role
2. personal attractiveness/conformity, acceptance, leadership

Occupation

1. perception
2. students percep. of teacher effectiveness
3. business interactions
4. female applicants/middle managment positions
5. color assessment of char. of job applicants
6. power & influence in courtroom **
7. juror perception lawyer's dress

Children

1. used clothing attitudes & values/parents * of pre-school

Other

1. pers. appearance issues appearing in courts of law/judicial decisions
2. proximity of clothing to self **

* AES

** Internal Univ. Funding

CULTURAL

Black

1. self esteem & locus of control/cl. of black people
2. meaning assoc. with changes in black Amer. hairstyles

Other

1. Korean assimil. west. cult.-indiv. by cl. attitudes

addressing this new group. Internal and AES funding supports only a minor amount of the research projects in this area. Possibilities exist for industry and Department of Commerce funding which appear to be untapped. Additional funding sources in this area are possible as a component of functional design research.

One project, reported elsewhere in this analysis, on protective clothing for agricultural workers, did contain a social-psychological component as farm workers were surveyed regarding their attitudes toward protective clothing. Although the major portion of the research was on physical testing, this example illustrates the opportunity afforded in specific project research for the social-psychological area. When functional design projects are being developed, all areas can benefit if they are involved in a holistic approach to the problem.

Table 3
SPECIAL NEEDS

Handicapped

1. cl. for spec. needs
2. cl. needs phys. handicapped
3. cl. for independent living *
4. cl. sat. & dissat./phys. hand. 6-16 pub.schls. *
5. info. system/cl. & daily living needs *

Elderly

1. cl. prob.& pref. men & women 65+
2. cl. attitudes retired men/social partic.& life satis.
3. cl. needs elderly men ***1
4. cl./relates to life satis. elderly females
5. cl. for female nursing home residents/textile comfort factors
6. daily needs & interests older people
7. fasteners/female arthritis
8. design charac./arthritic women

Therapeutic

1. cl. for post-mastectomy patient
2. assess. therap. value of appear. prog. ***2
3. cosmetic therapy/chemo therapy patients

Functional

1. reduction of dermal exposure in pesticide applicators */***3
2. sizing of women's cl.

* AES

*** External Funding: 1. AHEA; 2. Amer. Cancer Soc.
3. Pesticide Impact Assessment Program - USDA

The HERAPP objective for the area of special needs is "to identify, analyze and assist in meeting the clothing needs of handicapped persons and those with other special clothing needs." Information has been used in Extension programs. However, innovative solutions to problems through application of data into a problem-solving approach to design and impact clothing styles and features available has been very limited. Modest funding has been obtained from rehabilitation agencies and will become more difficult to obtain in the future. Areas to be further examined include the acquisition

of clothing by persons with special needs. Availability and accessibility of clothing for handicapped persons and the elderly may show increased importance as research areas.

Special needs research has a great opportunity in special purpose occupational clothing design. The use of a systems approach to design--whereby needs are assessed, materials and methods are evaluated and specifications are concluded for prototype design--can impact special needs research. Government and industry funding is ready for technical input from researchers with expertise in these areas. (Table 3)

Table 4

ECONOMICS

Low Economic Conditions

1. cl: acq. model during econ. uncertainty *
2. wear & fashion life new & used men's cl. *
rel. to cost & psych. factors
3. use of recycled cl.

Fashion

1. cl. pref. & pract. rel. to perceived risk of fashion change *
2. male style pref. & perceived fashion risk rel. to fashion cycle
3. women's business cl.
4. fashion leadership

Other

1. perceived econ. risk/complex. dress styles *
2. cl. use & qual. life/rural & urban commun. *

MERCHANDISING

Consumer related

1. deceptive advertising **
2. attitude toward imported apparel
3. interest in qual. ready to wear
4. shopping behavior of mature adult
5. needs & satis. of elderly shopper
6. profile of retired consumer re: market-place dissatisfaction **
7. expectations in info. source at fab. store
8. distance travelled to purchase fabric
9. profile of urban & rural fabric store cust.
10. segmentation of home sewing market

Product related

1. qual. control prob's. with women's fash. apparel
2. quality of woven OC fabric

Industry related

1. modern marketing orientation/tex. industry
2. resort area retailers/impact of energy crisis **
3. tex. & apparel workers view of imported apparel
4. retailers attitude toward imported apparel *

* AES

** Internal University Funding

In the economic area, the overall objective is stated "to provide a sound basis for understanding the interaction of family use of textiles and clothing with the economy." (HERAPP 1978) Previous research centered on consumption and standard budget development from descriptive data. Increased possibilities for work on prediction from complex modelling is needed.

Current projects in this area include a large number related to merchandising textile and clothing goods. (Table 4) Consumer related studies have received the greatest attention. Industry and product related studies show promise of external funding when aggressively sought. Most undergraduate departments of textiles and clothing show merchandising to be the major for the majority of students. Increased need for faculty with advanced degrees in this area will present universities

with the challenges of providing more research opportunities for graduate students seeking these degrees. Research projects aligned with retailers' needs can be valuable assets to the total area of study, when an overall research plan which will contribute to the body of merchandising knowledge is prepared by faculty researchers. Funding from retailers for projects to meet their specific needs can be utilized to the fullest only when these are viewed as additions to or continuations of larger scale projects.

The historic area's overall objective is "to describe historic textiles and clothing accurately and to relate characteristics of production, distribution, technical processes and artistic expression to characteristics of the producing groups and conditions of time." (HERAPP 1978) The American Bicentennial stimulated research interest in historic artifacts of all types. (Table 5) This area will most likely continue in importance

Table 5

HISTORIC

Construction

1. drafting system 1607-1908 ***
2. drafting system for men in 19th c.
3. restoration of early 20 c. cost.

Regional

1. Iowa 1850-1899
2. Northern Ohio 1860-1900
3. pearl button industry in Muscatine, IA *

Spec. group: childrens' cloth., pregnancy

1. analy. of child. lit. as sources for child. cl. 1864-1899
2. child. cl. in Amer. West 1868-1874
3. pregnant women 1850-1980 *

Other

1. Coptic weaver
2. tunic of Egypt
3. Middle Ages
4. Persian silk text. (ident. & eval.)

Collections

1. computerized classif. system
2. glossary & cat. women's hats 1750-1800

* AES

*** External Funding (Nat. Endow. Hum.)

to a degree. The greatest opportunity for research may be in regional projects through regional historical society funding, with limited funding from the national arts area. The research possibilities extend beyond the modes of dress to the production and distribution of textiles and clothing, as regional societies strive to attain historical perspectives of their economic heritage.

Additional clothing studies were reported and categorized as instructional. (Table 6) These studies will continue to be of supporting value to the dissemination of information at all levels of education. Funding outlook is poor and total contribution to the textiles and clothing body of knowledge is minimal.

Table 6

INSTRUCTIONAL

1. indiv. instruction pre-internship
2. indiv. instruction flat pattern
3. garment fitting & pattern alt.
4. pant alt. - graphic somatometry tech.
5. cl. const./phys. handicap study
6. employment oppor./2-4 yr. merch.prog.

Missing from this compilation of research projects is the area of apparel production. There has been some research in past years on clothing construction methods and pattern alterations from a home construction perspective.

Although most departments of textiles and clothing continue to teach some home construction methods in support of education and extension programs, the addition of mass apparel production courses has become evident. These courses support the large merchandising programs and may add student options in apparel production management. As this trend increases, opportunities for research relevant to mass production methods will become visible. The American Apparel Manufacturers Association has expressed an interest in advanced degrees in apparel production and in opening the avenues for research which could benefit the U.S. apparel industry.

Textile Research Areas

In the textile area the general research objective is "to determine properties of textiles desired by consumers and to develop ways of obtaining those properties." (HERAPP 1978) This has been the greatest area for research in productivity and funding. Studies in the area of flammability have dominated this area in the past few years. A modest number are still conducted, but they will continue to decrease. (Table 7) Performance studies have the potential of increasing as they relate to the development

Table 7
PERFORMANCE STUDIES

Flammability	
1. factors effect. cons. use/FR fabrics	*
2. cons. use pref./FR fabrics	*
3. subj. & hand properties/FR sleepwear	**
4. fabric softeners' effects	
5. furniture/FR home treatment	
6. burn study/product & injury	*
Laundering	
1. durable press shirts wear life satis.	
2. 100% cotton shirt care & maintenance	
3. laundry/durability men's underwear	*
4. color changes/laundrying	
5. rinse wash residue/pesticide contam.cl.	**
6. pesticide removal	*/***
General	
1. cons.percep. warmth of wool & other fib.	
2. fabric shagging	
* AES	
** Internal University Funding	
*** External Funding: PIAP	

Table 8
TEXTILE ENERGY

1. ht. transmission	***1
2. thermal energy cons.	
3. text.sel.for energy conserv.	
4. field est. on clo value	
5. ins.& air perm /warm up suits	***2
6. fabric composition/energy demand	
7. human values/adj. less energy intens. lifestyles	**
8. phys. responses to exp. to intermittent heat	***3
9. information dissemination/energy conserv.	
10. energ.conserv., consumer acceptance, care & maintenance	
11. cold water laundering effects	
12. home laundering/energy	
** Internal Univ. Funding	
***External Funding: 1. ASHRAE 2. DuPont 3. Nat. Inst. Occup. Safety	

of special needs projects. Fabric characteristics will need to be determined for types of protective clothing and energy related products.

The energy area is one which has experienced increased interest and rapid growth in the past few years. (Table 8) This growth will continue in the future with a concentration on methodology in heat transfer measurement and the contributions which fiber structure, orientation, crystallinity, chemical treatment and encapsulation have on functional thermophysical properties. There is wide opportunity for product evaluation and analysis in this area. Funding from private industry should be sought by departments with the capabilities of heat transfer testing. Methodology can be advanced while consumer product testing is being serviced.

In the textile chemistry area advances can be made in fiber and fabric development with textile researchers and polymer engineering cooperation. Basic research in this area could lead to advances for consumer products in years to come, and support from AES and other funding sources should be encouraged.

Continued research in the area of contaminants, such as the pesticide work begun by several universities, will be expanded and broadened. Indoor air pollution effects on fabrics will also increase in importance.(Table 9)

The textile design area will continue to contribute modest advances in the area of the arts. The potential for growth lies in industrial design. One study reported, on computer aided textile design, leads the way in this field. Cooperation with industry in this area could hasten advances currently underway. (Table 10)

Table 9
TEXTILE CHEMISTRY

<u>Dye</u>	
1. microwave dying/polyester	
2. low energy catalyst/pigment appli.	***1
<u>Fabrics & fibers</u>	
synthetics	
1. acrylic fiber/lt. scattering	*
2. dilute sol. viscometry/polyester	*
3. bonding/nonwoven	*
natural fibers	
1. improv. strength & abrasion/reused wool	**
2. photo-degradation of cotton tentage	*
cons. testing	
1. lt. scattering/consumer-like use	*
2. torsional fatigue behavior	*
pollutants	
1. sorption & desorp. indoor air poll.	*
2. ozone poll. & UV lt. on fabrics	*
3. xenon arc effects	*
pesticides & insects	
1. microwave/ on insects & text.	*
2. low & reg. vol. effects	***2
3. dermal exp.	***3/*

* AES & USDA

** Internal Univ. Funding

*** External Funding: 1. Nat. Sci. Found., 2. PIAP,
3. PIAP

Table 10
TEXTILE DESIGN

1. creative woven-dobbey loom **
2. computer aided textile dsn. **
3. Indian sub continent
4. So.est. Indian text./contemp. weaving
5. weavers in Kentucky (hist.)

CLASSIFICATION & IDENTIFICATION

1. archeological tex./survival mech.
2. tapestry analysis/Heads & Birch
3. pre-columbian tex.
4. color/pre-columbian
5. coptic textiles
6. coptic classif.
7. pre-columbian collection

** Internal Univ. Funding

Chemical analysis of textile design is supportive work for the history of clothing area. Here again, restoration and preservation interests can come from historical and art foundation funding. (Table 11)

The applied area of home furnishings has been singled out in this analysis for the purpose of illustrating that this minor area presently has great potential in all phases of textile research. (Table 12) Performance studies, the energy area, textile chemistry, and historic restoration could all be applied to home furnishing products. Support from the home furnishing industry could greatly benefit the textile research area and, ultimately, consumer products.

Table 12
HOME FURNISHINGS

- | | |
|---|----|
| <u>Drapery</u> | |
| 1. market & use/draperies & curtains | |
| 2. energy use/home window treatments | |
| 3. wear/open-weave, foam-backed draperies | |
| <u>Upholstery</u> | |
| 1. consumer expectation & satisfaction * | |
| 2. upholstery furniture action council * | |
| <u>Other</u> | |
| 1. meas. environ. comfort | ** |

* AES

** Internal Univ. Funding

Table 11
CHEMICAL ANALYSIS/TEXTILE DESIGN

1. dye analysis for hist. fabrics
2. chromatography of dyes
3. historic silk fiber fracture
4. chem. & phys. analysis of tapestry
5. X-ray fluorescence analysis/hist. problems ***
6. radiocarbon dating coptic textiles
7. effects pesticide on historic textiles *

* AES

*** External Funding (National Sci. Found.)

Summary

Textiles and clothing encompasses a great diversity of research areas. The impact this research can make on consumers has a potential well beyond what is currently seen. The benefit to consumers is the ultimate goal, yet much of the research findings are only internalized among researchers. With their backgrounds of knowledge in the physical and social sciences, textile and clothing researchers can direct their efforts at advancing products that are essential for consumers in today's world. Their sensitivity to human-environment interaction will keep product advancement in harmony with social needs. The challenge for researchers in the outlook of this field is for closer alliance with government and industry in development of research projects. Such alliance through proposal review and funding will help direct research in areas of greatest concern and need, and will ensure that information is imparted to sources who can effectively put it to use for consumers.

The challenge for educators in Extension and other programs is to keep researchers informed of consumer needs, to understand the areas of expertise available through textiles and clothing research, and to stay up to date on research findings and disseminate those findings to the consumer audience. Much has been accomplished in textiles and clothing research in the past; however, the future offers opportunity for greater impact, if we accept the challenges.

Leo V. Mayer, Associate Administrator
Foreign Agricultural Service

OUTLOOK '82

1982 Agricultural Outlook Conference, Session #4
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This year perhaps more than ever before economic variables are making the forecasting of agricultural exports something less than a precise art.

The year just past gives an indication. At the Outlook Conference for fiscal 1981 a year ago, the Department was forecasting another record export year in both value and volume, with shipments pegged at 170 million metric tons valued at more than \$48 billion. The agricultural trade surplus was projected to reach nearly \$30 billion.

Looking back today, we find that the forecasts of new heights for export value and the trade surplus were achieved, but they were substantially below expectations -- a total of \$43.8 billion for exports and nearly \$27 billion for the trade surplus. And export volume was off slightly from the 163-plus million tons of fiscal 1980.

The variables that pushed results below expectations are generally well known, although some were not anticipated at Outlook time a year ago.

One was high interest rates, which tended to constrain the ability of developing countries to buy larger volumes of goods, including agricultural commodities, and discouraged buying beyond immediate needs by some importers.

Another factor was the dramatically stronger dollar, which made U.S. goods more expensive in international markets. It is hard to pinpoint the net effect of exchange rate movements on U.S. exports. However, I think it is significant that U.S. farm exports were moving as targeted until the dollar's rapid rise during the spring and summer of 1981. After that appreciation, our exports deviated downward from the forecasted levels.

Those two factors -- high interest and the stronger dollar -- combined with a generally sluggish worldwide economic performance to dampen demand for U.S. agricultural products.

There is another factor that took on increasing significance during the past year. I am referring to the use of trade-restricting and trade distorting practices, and I will return to that later.

Looking ahead, all of these factors will continue to affect agricultural trade during fiscal year 1982. It is not possible, of course, to project with accuracy either the degree or direction of their impact.

At the same time, there are two certain elements in the FY 1982 export picture, and the impact of both will be positive. First, we are in a good export supply position. Second, the Department of Agriculture, with full administration support, has mounted a vigorous campaign to move these supplies into the world market.

Record crops of corn and wheat, and a near-record crop of soybeans have more than assured abundant supplies and as a result we expect last fiscal year's trends in volume and price to be reversed. We project fiscal 1982 agricultural exports to increase by about 10 percent in volume while export unit values decline an average of about 6 percent.

Putting numbers on this appraisal, we have forecast total agricultural exports for fiscal 1982 of about 180 million tons valued at close to \$45.5 billion. The agricultural trade surplus is expected to increase marginally to \$28 billion.

We expect some value gain in all commodity categories except oilseeds and products, which are projected to be unchanged, despite an expected increase of almost 3 million tons in soybean exports. Major increases are expected for wheat exports, which are forecast at over 50 million tons, and feed grain exports, which are forecast at more than 74 million tons. The value of total grain and feed exports is projected to rise by more than 3 percent to about \$22.4 billion, with a gain in the value of wheat exports more than offsetting a slight decline in that of corn.

Cotton exports also are forecast to increase substantially after last year's decline. We look for a gain of about one-fourth in volume and close to 15 percent in value for cotton shipments to about \$2.6 billion.

Wheat, feed grains and soybeans will continue to provide more than two-thirds of U.S. agricultural export earnings.

Wheat exports should reach a record of over 50 million tons, nearly one-fifth larger than last season, and the United States should capture virtually all of the expected growth in world wheat trade. Already, U.S. wheat exports sales in the 1981/82 marketing year are 25 percent ahead of the pace of a year earlier.

U.S. wheat exports are expected to benefit substantially from expanded Soviet imports and the return of India to the world market. Other positive factors are likely to be large imports by Turkey, normally a wheat exporter, larger imports in North Africa, where there were crop difficulties, and growing imports by a number of developing countries including Egypt, Brazil and South Korea.

At this stage, crop shortfalls in Australia and Argentina could drive this export forecast higher while factors that could bring it down would include no purchases by India beyond the 1.5 million tons already contracted for or lower Soviet imports than are now anticipated.

The outlook for corn and coarse grain exports, although a record volume is expected, is not quite as optimistic as that for wheat. At this time, we forecast corn exports to rise 7 percent, mostly on the strength of anticipated record Soviet imports.

However, in countries other than the Soviet Union, uncertain economic conditions have resulted in sluggish demand for livestock products and feed grain imports. At the same time, production in the other exporting countries is expected to remain high for the second consecutive year, and exports by these countries will be up sharply.

While only 5 percent of world coarse grain output is produced in Argentina, Australia, and South Africa, these Southern Hemisphere countries are major competitors and swing factors in world coarse grain trade. The United States generally supplies about two-thirds or more of world trade in coarse grains and these three competitors account for about 20 percent.

Clearly, production in these countries is of keen interest to U.S. exporters, and its impact is heightened because storage and other infrastructure constraints dictate that output be marketed as soon and as fully as possible. Corn harvests begin in March in Argentina and in May in South Africa. Dry conditions have delayed corn planting in Argentina.

If the Southern Hemisphere corn crops are not up to current expectations or if Soviet feed grain imports are larger than now anticipated, U.S. corn exports could, of course, be larger than now forecast. We could also see an additional increase in shipments if the current favorable level of world price begins to stimulate demand. On the other hand, should Soviet imports fall below expectations and economic conditions worsen, exports could be lower.

As for soybeans, sharply reduced shipments of beans and products from the Southern Hemisphere combined with improving crushing and feeding margins should translate into larger U.S. exports in 1981/82.

On the supply side, Brazil shipped a very large portion of its products in the March-September period, hurting U.S. sales in 1980/81. Now, with dwindling supplies, exports from the Southern Hemisphere will taper off significantly in the next several months, leaving the United States as

the principal supplier of soybeans and products. In addition, growth in foreign output of oils and fats other than soybean oil will decline relative to 1980/81.

With improved crushing margins and lower prices, world soybean utilization should rebound from last year's decline. Soybean imports by the European Community, the Soviet Union and Spain are expected to show healthy increases, while Japanese imports should at least match last year's level.

Among the major soybean markets, only Mexico will register a drop compared to 1980/81.

World meal consumption should show a 6 percent increase in 1981/82, reflecting lower meal prices in response to larger soybean supplies. In addition, U.S. soybean oil exports will be helped by relatively low vegetable oil prices and depleted stocks levels in most importing countries. Together with a 300,000 ton drop in Brazilian soybean oil shipments in 1981/82, this should boost U.S. exports of soybean oil by about 40 percent to over 1 million tons.

However, lower unit prices are expected to hold the value of our exports of soybeans and products at about last year's level.

One of the bright lights in our overall agricultural trade picture is exports of livestock and livestock products. This group of items is projected to be a leader in higher export earnings, gaining 13 percent to \$3.6 billion. Poultry exports are expected to rise by 9 percent to \$838 million. Butter sales will be the major factor in a projected gain in exports of dairy products for a total value of \$370 million.

Among other items, we project an increase in exports of fruits, nuts, and vegetables of 3 percent to more than \$3.3 billion and tobacco shipments should be up in both volume and value to \$1.5 billion. A decline in sugar exports from the abnormal fiscal 1981 high will push the value of shipments of sugar and tropical products down about 5 percent from last year's \$1.37 billion.

As I suggested earlier, the export gains that we project must be achieved under increasingly restrictive world market conditions and increased competition from other suppliers. And to meet the challenge, we have launched an intensified effort to expand new markets, maintain old markets and effectively meet the competition.

The first major step in improving the U.S. market position was taken last April 24 when President Reagan lifted the partial embargo on agricultural sales to the Soviet Union. This opened the way for a return to more normal trade in a market that has taken as much as about 15 million tons of U.S. grain and nearly 2 million tons of U.S. soybeans in past years.

It will take time and effort to recover our position in this market. The long term grain agreement with the Soviets has subsequently been extended for one year and we have offered the Soviets 15 million tons of corn and wheat for this year beyond the 8 million-ton maximum specified in the agreement.

If the Soviet Union, faced with its third straight year of poor harvests, should buy at the maximum level, it would mean purchases of 23 million tons valued at well over \$3 billion. However, the Soviets have long-term commitments to buy from other suppliers -- commitments negotiated during the U.S. embargo -- and their import capability is not unlimited. They already have bought more than 8 million tons of corn and wheat for delivery in this agreement year, and the sale of 500,000 tons of soybeans, which are not covered by the agreement, has been reported -- the first such sale in a year and a half.

To meet the competition head-on, the Department has sent government-industry grain and soybean oil market development teams, which included producer members, into countries with strong import growth potential in Latin America, North Africa and the Far East.

These teams generally reported excellent success in establishing a rapport with government officials and the trade in their host countries. They found a positive reaction to this demonstration of cooperative action by the U.S. Government, producers and exporters to better serve importer needs, and they brought back recommendations on what can be done in each market to sell more U.S. grains and soybean products. We have assigned top priority to action on these recommendations.

To augment these efforts, Secretary Block has led two market development missions overseas.

The first was to the European Community, primarily to make clear to officials of the Community and its member countries the U.S. opposition to the increasing use by the EC of export subsidies and its proposals to further restrict access to the EC market for U.S. agricultural products.

We are pleased that the EC Commission subsequently set aside its proposal for an internal vegetable oils and fats tax that would have damaged a \$4 billion market for U.S. soybeans and products. But we remain concerned over EC sentiment for ending the duty-free status of non-grain feed ingredients -- a \$600 million item for U.S. agriculture -- and its proposal for a Common Export Policy. This would expand the use of export subsidies and other trade-distorting and restricting mechanisms to cope with the surpluses generated by the Common Agricultural Policy.

Protected by variable import levies and stimulated to produce all-out by high support prices, EC farmers have made the EC a surplus producer of nearly all agricultural products except soybeans. As a result, their surplus disposal efforts threaten U.S. shares of third country markets and their import policies are hurting our export sales.

Last fiscal year, U.S. agricultural exports to the Community, our oldest market and traditionally our largest regional market, declined by 8 percent to \$8.8 billion. This occurred while shipments to all other markets went up in value by nearly 13 percent.

The problems created for the Community by the CAP are well understood within the Community. The rising costs -- which now take about two-thirds of the entire EC budget -- are of crisis proportions, and CAP reform is being discussed. Some members are taking a responsible view, urging domestic rather than international solutions.

We hope they will prevail, and this becomes even more important to U.S. trade with the pending addition of Spain and Portugal to the EC.

The second market development mission by Secretary Block, made in October, was to Japan, South Korea and China. It is significant that these three markets combined have far surpassed the European Community as a market for U.S. agriculture, taking \$10.9 billion worth of U.S. farm products in fiscal 1981, nearly one-fourth more than the Community.

They are among our top 15 growth markets over the past five years, and they should continue to grow, with proper attention by U.S. Government and private agencies.

Japan, as you know, has been U.S. agriculture's top country market for years, with imports of U.S. farm products last fiscal year of \$6.7 billion. Around 85 percent of our shipments to Japan have been of bulk commodities, and Japan is consistently at or near the top as a market for U.S. wheat, corn, soybeans and cotton. Even so, restraints on imports impede export growth, an issue we intend to take up with the Japanese in 1982.

China and Korea, with agricultural imports from the United States totaling \$2.1 billion each last fiscal year, are indicative of the trend in the world agricultural market. The developing countries and the nonmarket economies have become major growth markets for trade.

Nearly 50 percent of all U.S. agricultural exports in the last fiscal year went to these developing and non-market countries, compared with 38 percent 4 years ago.

Five-year average growth rates for U.S. agricultural exports are over 30 percent to Eastern Europe, from 30 to 35 percent to Mexico and Venezuela in Latin America, and 30 to 40 percent to Egypt, Nigeria, and Saudi Arabia in Africa and the Middle East.

Mexico, in fact, has become our second largest market with imports of U.S. farm products exceeding \$2.7 billion last fiscal year.

Overall, we expect a slowdown in export growth to these centrally-planned and developing markets in fiscal 1982. Improved supply situations in some countries, particularly in Latin America, shortages of foreign exchange as a result of energy costs, the high costs of credit, and the uncertain financial situation in Poland, our largest customer in Eastern Europe, are likely constraints on trade growth.

However, shipments to these markets will grow, and with the return of the Soviet Union to the U.S. market and substantial growth of 20 percent in shipments to the Middle East and Africa in prospect, we project the increase will be 21 percent.

It seems clear to me that this year's export forecast should be studded with asterisks beyond the usual caveats of weather and the other uncertainties related to crop production in this and other countries. What will happen to interest rates, the exchange position of the dollar, and the direction of a sluggish world economy? To what degree will the Department's intensive export drive succeed, and can the trend toward trade restriction and distortion be stopped?

More than ever, the course of U.S. agricultural export trade will depend on our ability to maintain and expand foreign markets, as well as on worldwide supply and demand considerations.

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U.S. EXPORTS AND TRADE BALANCES

Fiscal Year	Total U.S. Exports	Agricultural Exports	Agriculture as percent of Total Exports	Agricultural Trade Balance	Total Trade Balance
	Million Dollars	Million Dollars	Percent	Billion Dollars	Billion Dollars
1970	41,295	6,958	16.8	+1.3	2.2
1971	43,883	7,955	18.1	+1.8	-1.0
1972	44,875	8,242	18.4	+2.3	-7.0
1973	62,743	14,984	23.9	+7.2	-2.5
1974	90,431	21,608	23.9	+11.6	-2.4
1975	104,034	21,854	21.0	+12.4	+5.2
1976	111,280	22,760	20.5	+12.2	-3.2
1977	118,285	23,974	20.3	+10.6	-24.4
1978	131,196	27,290	20.8	+13.4	-33.6
1979	167,606	31,975	19.1	+15.8	-26.0
1980	210,234	40,481	19.3	+23.2	-26.3
1981 <u>1/</u>	229,228	43,788	19.1	+26.7	-26.3

1/ Preliminary.

U.S. TOTAL AND AGRICULTURAL IMPORTS

Fiscal Year	Total U.S. Imports	Agricultural Imports	Agriculture as percent of Total Imports	Competitive	Non-competitive
	Million Dollars	Million Dollars	Percent	Million Dollars	Million Dollars
1970	39,065	5,686	14.6	3,492	2,194
1971	44,872	6,128	13.7	3,817	2,311
1972	51,862	5,936	11.4	3,974	1,962
1973	65,258	7,737	11.9	5,014	2,723
1974	92,841	10,057	10.8	6,713	3,344
1975	98,767	9,470	9.6	6,609	2,861
1976	114,511	10,514	9.2	6,305	4,209
1977	142,648	13,357	9.4	6,554	6,804
1978	164,802	13,886	8.4	7,314	6,572
1979	193,621	16,187	8.4	9,075	7,111
1980	236,581	17,276	7.3	9,949	7,351
1981	255,536	17,218	6.7	11,318	5,900

U.S. AGRICULTURAL EXPORTS
FISCAL YEAR AVERAGES AND COMMODITY SHARES

Commodity	1969-71		1979-81	
	Share		Share	
	Value	of	Value	of
		Total		Total
	Billion Dollars	Percent	Billion Dollars	Percent
Grain & Feed	2.350	34.1	17.870	46.1
Oilseeds & Products	1.790	26.0	9.370	24.2
Cotton, including linters	.400	5.8	2.397	6.2
Tobacco	.557	8.1	1.327	3.4
Seeds	.054	.8	.235	.6
Fruits, Nuts & Vegetables	.593	8.6	2.647	6.8
Sugar & Tropical Products	.368	5.4	1.035	2.7
Livestock Products	.571	8.3	3.131	8.1
Dairy Products	.147	2.1	.176	.5
Poultry Products	.058	.8	.560	1.4
TOTAL	6.888	100.0	38.748	100.0

U.S. AGRICULTURAL EXPORTS BY DESTINATION
AVERAGE 1969-71 and 1979-81

Area	1969-71		1979-81	
	Share		Share	
	Value	of	Value	of
		Total		Total
	Billion Dollars	Percent	Billion Dollars	Percent
Developed	4.4	64	20.1	52
EC-9	2.0	29	8.4	22
Japan	1.0	14	5.9	15
Other	1.4	20	5.8	15
Developing	2.2	32	12.6	33
Oil exporting	.5	7	5.3	14
Non oil exporting	1.7	25	7.3	19
Centrally Planned	.2	3	5.2	13
USSR	--	--	1.7	4
China	--	--	1.8	5
Eastern Europe	.2	3	1.7	4
TOTAL <u>1/</u>	6.9	100	38.8	100

1/ May not add due to rounding.

U.S. agricultural exports: Value by commodity,
Fiscal years 1979-82

Commodity	:	:	:	:Preliminary:	Forecast :					
	:	1979	:	1980	:	1981	:	1982	:	
	:	-- Billion dollars --								:
Grains and feed	:	13.459	:	18.512	:	21.906	:	22.3	:	
Wheat & wheat flour	:	4.775	:	6.555	:	7.965	:	9.2	:	
Rice	:	.885	:	1.171	:	1.538	:	1.1	:	
Feed Grains	:	6.658	:	9.102	:	10.402	:	10.2	:	
Oilseeds and Products	:	8.692	:	10.017	:	9.400	:	9.4	:	
Soybean cake and meal	:	1.365	:	1.642	:	1.596	:	1.5	:	
Soybeans	:	5.444	:	6.164	:	5.986	:	5.8	:	
Soybean oil	:	.706	:	.782	:	.457	:	.6	:	
Seeds	:	.179	:	.242	:	.285	:	.3	:	
Livestock products	:	3.160	:	3.096	:	3.136	:	3.6	:	
Dairy products	:	.120	:	.161	:	.251	:	.4	:	
Poultry products	:	.368	:	.546	:	.765	:	.8	:	
Cotton, including linters	:	1.910	:	3.033	:	2.248	:	2.6	:	
Tobacco	:	1.292	:	1.349	:	1.339	:	1.5	:	
Fruits, vegetables & nuts	:	2.066	:	2.699	:	3.084	:	3.3	:	
Sugar and tropical products:	:	.733	:	.826	:	1.374	:	1.3	:	
Total	:	31.979	:	40.481	:	43.788	:	45.5	:	

U.S. agricultural exports: Volume by commodity
Fiscal Years 1979-82

Commodity	:	:	:	Preliminary:	Forecast :					
	:	1979	:	1980	:	1981	:	1982	:	
	:	-- Million metric tons --								:
	:		:		:		:		:	
Wheat	:	31.340	:	36.066	:	42.246	:	50.0	:	
Wheat Flour	:	.877	:	.882	:	.949	:	1.0	:	
Feed grains	:	59.504	:	71.159	:	69.004	:	74.1	:	
Rice	:	2.397	:	2.955	:	3.172	:	2.6	:	
Other grain products	:	.963	:	1.074	:	1.194	:	1.3	:	
Feeds and fodders	:	4.304	:	6.242	:	5.820	:	5.8	:	
Soybeans	:	20.194	:	23.833	:	19.972	:	22.9	:	
Soybean meal	:	5.996	:	7.175	:	6.140	:	6.7	:	
Other oilcake and meal	:	.294	:	.425	:	.450	:	.5	:	
Soybean oil	:	1.059	:	1.220	:	.739	:	1.0	:	
Other vegetable oils	:	.460	:	.596	:	.838	:	.9	:	
Sunflower seed	:	1.342	:	1.927	:	1.426	:	1.4	:	
Cotton, including linters	:	1.396	:	2.047	:	1.265	:	1.6	:	
Tobacco	:	.287	:	.283	:	.252	:	.3	:	
Fruits, nuts and vegetables:	:	2.808	:	2.967	:	3.249	:	3.6	:	
Beef, pork, & variety meats:	:	.326	:	.345	:	.447	:	.4	:	
Poultry meat	:	.208	:	.320	:	.395	:	.4	:	
Animal fats	:	1.276	:	1.508	:	1.515	:	1.5	:	
Other	:	2.430	:	2.853	:	3.540	:	4.0	:	
	:		:		:		:		:	
Total	:	137.461	:	163.877	:	162.613	:	180.0	:	

EXPORTS AS PERCENTAGE OF PRODUCTION FOR SELECTED COMMODITIES

Commodity	1970	1980
		Percent
Wheat, including products	55	64
Rice	52	63
Cotton	38	53
Soybeans, including meal	53	51
Grain Sorghum	21	51
Dry Edible Beans	19	49
Almonds	23	44
Tobacco, unmanufactured	30	38
Corn	12	36
Walnuts	7	23
Raisins	34	22
Poultry	2	6

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Outlook in Brief

The world feed grain situation and outlook for 1981/82 is characterized by a peak crop in the United States, record or near-record production in other exporting countries, anticipated increased imports by the Soviet Union, but sluggish import demand elsewhere. These factors are combining to result in prices below those of a year earlier.

World trade, on the expected strength of expanded imports by the Soviet Union and by several countries of West Europe, is currently forecast to expand 6 percent to a record 111 million tons. At the current time, overall Soviet grain imports are projected at a record 43 million metric tons, up from 35 million in 1980/81. The absolute level of Soviet imports, the balance between coarse grain and wheat purchases, eventual export availabilities of coarse grains from Southern Hemisphere suppliers, and the timing of purchases are uncertainties as the 1981/82 season progresses. Elsewhere in the world, with uncertain economic conditions affecting the demand for livestock products, current expectations are for a leveling-off or a slight decline in imports. Fluctuating exchange rates, high interest rates, and more favorable prices to buyers than last year may also be causing many countries to purchase grains on a hand-to-mouth basis.

Production in the major foreign exporting countries - Canada, Australia, Argentina, South Africa, and Thailand - is at record or near-record levels for the second consecutive year, and the increase in exports by these countries may about match the increase in world trade during the July-June 1981/82 year. The realization of these trade expectations, however, hinges heavily on the outcome of the Southern Hemisphere harvests in early 1982 and the absence of shipping difficulties.

World production is currently expected to exceed utilization by about 16 million tons. As a result, global aggregate marketing year ending stocks are anticipated to rise by somewhat more than last season's decline. Most of the stocks increase is expected to occur in the United States, but stocks in the other exporting countries are also expected to rise, based on current crop and export prospects.

The Setting--Coarse grains, or feed grains, account for nearly half of the world's annual output of grain, including rice ^{1/}. Within the United States, about 85 percent of domestic usage is for livestock feeding, while in foreign countries the proportion is somewhat lower, around 55 percent. However, it is livestock feeding, resulting from a desire by people around the world to upgrade their diets, that has been the motor driving world trade in feed grains. For example, while world wheat trade grew by an annual rate of about 7 percent in the 1970's, feed grain trade expanded at an annual rate of roughly 12 percent. During the decade, U.S. wheat exports doubled from 20 million to around 40 million tons, and the U.S. share of world trade expanded from 36 to 43 percent; but for feed grains, U.S. exports nearly quadrupled from 19 million to about 70 million tons, and the U.S. share of world trade went from 41 to 70 percent. One reason for the U.S. dominance in the world feed grain picture is our ability to produce and efficiently transport corn. Corn, which makes up only about half of world coarse grain production, accounts for close to 80 percent of world coarse grain trade, and the United provides roughly three-quarters of the trade flow.

Production to Exceed Utilization

Owing largely to record production in the United States and continued high output in the other major exporters, including all-time highs for Canada and Thailand, 1981/82 world coarse grain production is currently forecast at 767 million tons, up 5 1/2 percent from a year earlier and 3 1/2 percent from the previous record of 2 years ago. In the aggregate, there is little indicated change in the area harvested, but the global yield is the highest ever. Soviet production is off for the third consecutive year due to poor weather and lowest area since 1972. The only other notable area reporting lower crop outturns is West Europe in general; more specifically Spain and Portugal. Larger crops are indicated for Mexico, Brazil, and East Europe.

The Northern Hemisphere coarse grain harvests are virtually complete, but a large degree of uncertainty still surrounds the Southern Hemisphere crops, which account for about one-tenth of the world total. Depending upon weather conditions before harvest in early 1982, lower crops are expected in Argentina and South Africa. Acreage has been expected to be cut slightly in Argentina. Both countries witnessed record-breaking yields last year which, at this early stage, are not expected to be repeated. In Brazil, the Government is pushing corn production, and a larger crop is currently anticipated.

At the global level, 1981/82 coarse grain utilization is currently forecast at 750 million tons, up only 1 percent from a year earlier. This past year global use remained virtually flat, largely as a result of decreases

^{1/} The terms feed grains and coarse grains are used interchangeably in this report. For the United States, feed grains or coarse grains include corn, sorghum, barley, oats, and rye. For foreign countries, these same grains are included plus millet and mixed grains. Corn production accounts for about half of worldwide coarse grains production, barley about a quarter, sorghum one-tenth, and oats, rye, and mixed grains, the balance.

in the United States and the Soviet Union and only modest increases elsewhere. For 1981/82, some recovery is indicated in the United States, but even with possible record imports, Soviet coarse grain use may remain unchanged. In the major developed markets of West Europe and Japan, sluggish economic growth and virtually no expansion of livestock numbers is expected to hold coarse grain use at year-earlier levels. Likewise, little expansion is currently anticipated in East Europe. Usage may, however, continue to expand in the developing countries, especially in markets such as South Korea, Taiwan, Egypt, Nigeria, and Venezuela. Aside from the Soviet Union and those areas of West Europe that suffered crop losses, it is the expansion of livestock feeding in the developing countries that is expected to lend strength to world trade.

World Coarse Grain Summary

	: :1977/78	: :1978/79	: :1979/80	:Estimated : 1980/81	: Forecast : 1981/82
	--Million Metric Tons--				
World					
Production	: 701	754	740	727	767
Utilization	: 692	747	741	740	750
Ending Stocks	: 84	91	89	77	93
Stocks/Util. (%)	: (12)	(12)	(12)	(10)	(12)
Trade	: 84	90	101	105	111
United States					
Production	: 206	222	239	199	246
Utilization	: 138	157	161	147	156
Exports (Oct/Sept)	: 56	60	71	70	74
Ending Stocks	: 42	46	53	35	50
U.S. Stocks/World Stocks (%)	: (50)	(50)	(60)	(45)	(54)
Soviet Union					
Production	: 93	105	81	81	75
Utilization	: 108	113	102	99	99
Imports	: 12	10	18	18	24
Exports	: 1	1	--	--	--
Stocks Change	: -5	1	-2	0	0
Other Major Exporters ^{1/}					
Production	: 58	57	51	67	66
Utilization	: 34	36	36	36	37
Exports	: 21	23	21	23	29
Ending Stocks	: 11	11	7	10	13
Rest of World					
Production	: 344	370	369	380	380
Utilization	: 412	441	442	458	458
Imports	: 72	80	83	87	87
Exports	: 10	9	8	9	8
Net Imports	: 62	71	75	78	79

^{1/} Canada, Australia, Argentina, South Africa, and Thailand.

World Corn Summary

	:	:	:	:Estimated :	Forecast
	:1977/78	:1978/79	:1979/80	: 1980/81	: 1981/82
	:				
	:	--Million Metric Tons--			
	:				
World	:				
Production	: 365	391	423	402	436
Utilization	: 360	387	414	409	422
Ending Stocks	: 46	48	57	49	59
Stocks/Util. (%)	: (13)	(12)	(14)	(12)	(14)
Trade	: 61	65	75	81	84
	:				
United States	:				
Production	: 165	185	202	169	205
Utilization	: 110	126	132	124	129
Exports (Oct/Sept)	: 49	54	62	60	64
Ending Stocks	: 28	33	41	26	39
U.S. Stocks/World Stocks %	: (61)	(69)	(72)	(53)	(65)
	:				
Other Major Exporters <u>1/</u>	:				
Production	: 22	20	20	30	26
Utilization	: 11	10	11	12	12
Exports	: 10	11	9	12	16
Ending Stocks	: 3	2	2	5	5
	:				
Rest of World	:				
Production	: 178	186	201	203	205
Utilization	: 239	251	271	273	281
Imports	: 61	65	75	81	84
USSR	: 11	10	15	12	18
Japan	: 10	11	12	14	13
EC-10	: 13	13	13	13	12
Other W. Europe	: 8	7	7	7	10
East Europe	: 4	5	8	8	8
Mexico	: 2	1	3	5	3
So. Korea	: 2	3	2	3	3
Taiwan	: 2	3	2	3	3
Others	: 9	12	13	16	14
Exports	: 8	5	7	7	6
	:				

1/ Argentina, South Africa, and Thailand.

With record crops in the United States and early prospects for continued large harvests in other major exporting countries, production at the world level is currently expected to exceed utilization by a margin sufficient to allow global marketing year ending stocks to recover to the levels of 2 and 3 years ago. Most of the increase is expected to occur in the United States, and U.S. stocks may again represent slightly over half the world total. Some stocks build-up is also expected in Canada, where record crops have been gathered recently. South Africa's corn stocks will remain large, based on current crop expectations.

World Trade and U.S. Exports New Records

Current estimates point to a higher level of world coarse grain trade in 1981/82 and a modest increase in U.S. exports. World trade in coarse grains for 1981/82 is forecast at 111 million tons, 6 million tons larger than in 1980/81 and 10 million higher than 2 years ago. This past year, Soviet feed grain imports, in large measure due to export restrictions maintained by some exporters, remained unchanged, and most of the increase in world trade was accounted for by developing countries such as Mexico, Brazil, Peru, Egypt, Algeria, Taiwan, and Iran.

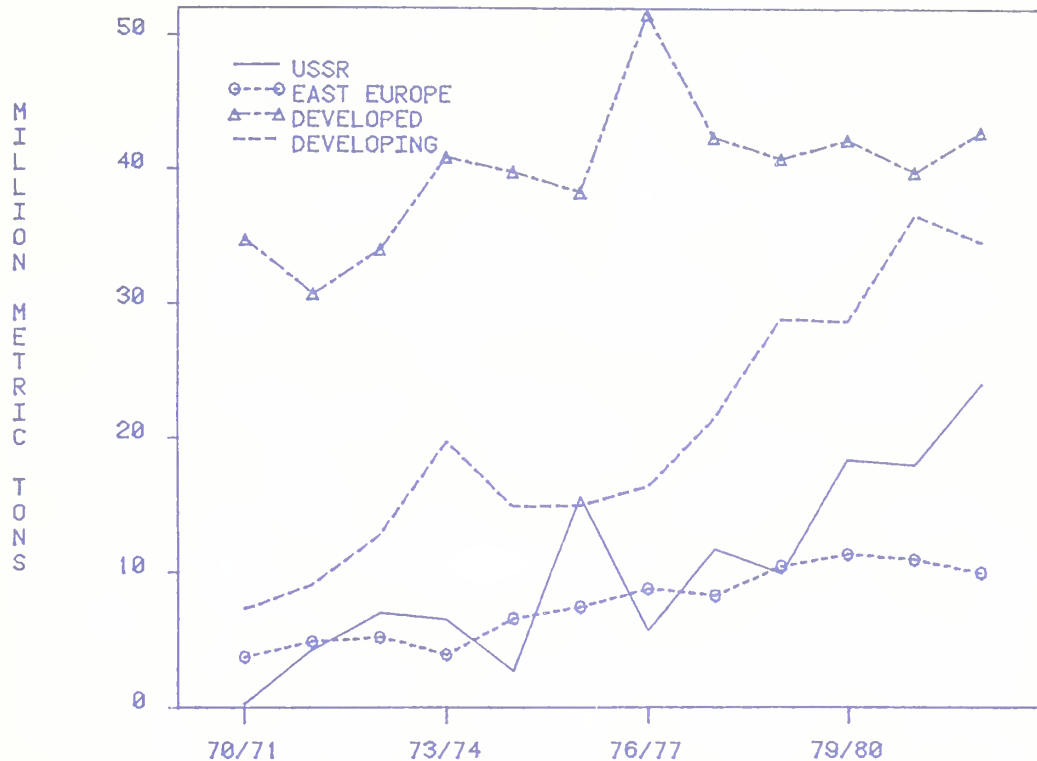
In the Soviet Union, continued reduced production for the third consecutive year, record or near-record livestock inventories, and the normalization of trade with the United States are expected to result in a sharp step-up in total grain imports, including potentially record coarse grain imports. Based on purchases to date, the portion of coarse grains in the total mix of imports could be increased, but the final level of imports will depend on future purchasing decisions, availabilities in the Southern Hemisphere exporting countries, shipping conditions both at points of loading and receipt, and the early outlook for the 1982 harvest. Currently, Soviet 1981/82 coarse grain imports are forecast at 24 million tons, up from 18 million last year. This increase is expected to account for most of the year-to-year increase in world coarse grain trade.

Imports by West Europe could also be higher than last year's 21 million tons due to crop shortfalls in Spain and Portugal. However, coarse grain feed utilization is not expected to be much changed from a year earlier. In the European Community, livestock output growth is expected to be slow; larger quantities of lower quality wheat are available for feeding, and economic incentives encourage domestic wheat feeding over feeding of imported corn. In terms of standard animal units, growth in the EC is expected to be less than 0.5 percent, about equal to last year, and poultry expansion is anticipated to be less than 3 percent. In addition to economic sluggishness, real livestock prices are expected to remain essentially unchanged, giving little incentive to increased livestock output.

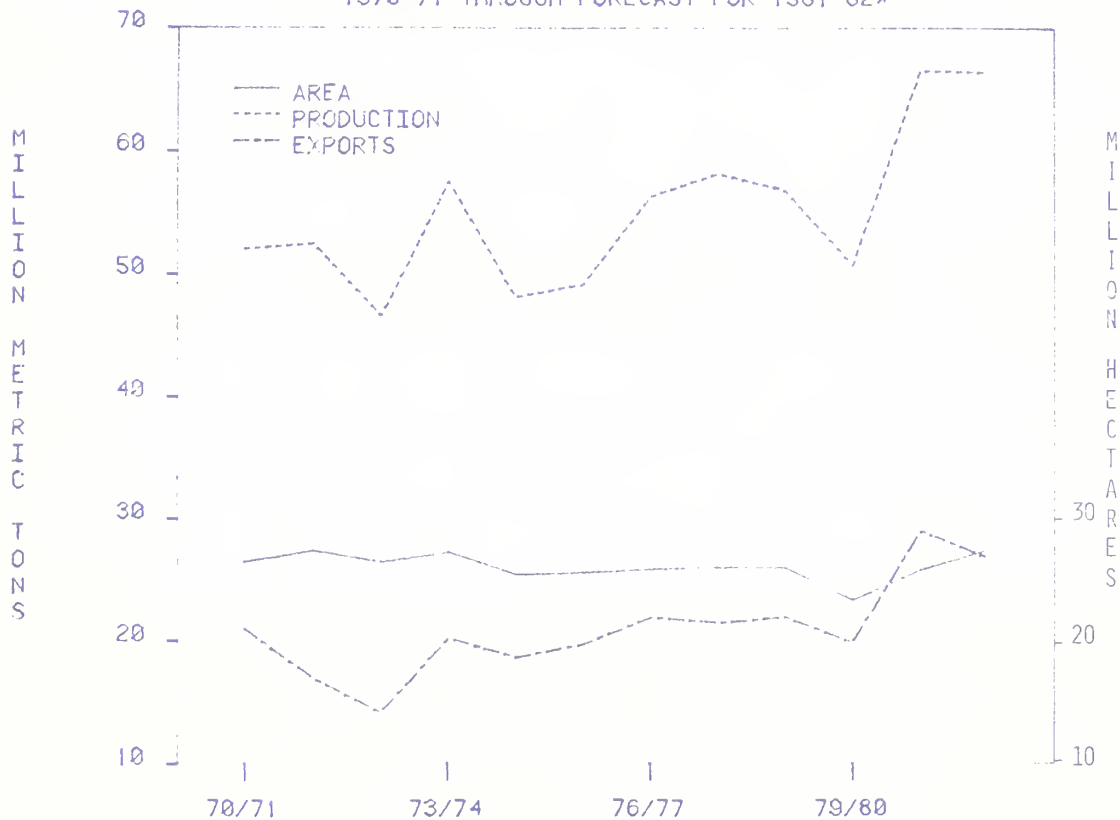
Overall East European livestock production is expected to be stagnant at best during 1981/82. Increases in livestock output are expected in the German Democratic Republic, Hungary, and Yugoslavia and will be offset by declines in most of the other East European countries. A somewhat better-than-average coarse grain crop and improved roughage supplies compared with a year ago are expected to help hold 1981/82 coarse grain imports to below last year's level of 11 million tons--particularly given the tight foreign exchange situation in several of these countries.

Japanese feed grain imports have been relatively stable over the past 3 years, at approximately 19 million tons. Mixed feed output in 1980/81 actually declined by 3 percent, although livestock numbers increased somewhat. Livestock producers have been using less compound feed to feed more animals, and broiler producers have been trying to cut back production in order to keep prices up. High prices for compound feeds have encouraged producers to feed more inexpensive by-products from the food processing industry and other substitute feeds. The Japanese Government, which has large stocks of surplus rice, has begun to move some of this rice into the mixed feed industry. Plans

FEED GRAIN IMPORTS BY MAJOR MARKET AREA
1970/71 - 1981/82 FORECAST



MAJOR FOREIGN COARSE GRAIN EXPORTING COUNTRIES
1970-71 THROUGH FORECAST FOR 1981-82*



* Canada, Australia, Argentina, South Africa, & Thailand

are to feed an average of 200,000-250,000 tons each year through 1984. In the short run, demand is expected to continue to grow slowly. As ingredient prices begin to fall because of large world feed grain availabilities, Japanese import demand is expected to pick up somewhat. In addition, incomes are expected to show real growth. However, the level of 1981/82 imports is not currently expected to increase compared with a year earlier.

Feed grain import demand in Taiwan and South Korea has been somewhat erratic in recent years following several years of rapid growth. In Taiwan, production of pork and eggs is expected to rebound this year, increasing the demand for imported feed grains. In South Korea, import demand is also expected to edge up as the livestock and poultry industries recover from the difficulties of the past 2 years. These two countries could import around 6.5 million tons in 1981/82.

Among other areas of the world, Mexico--which recently emerged as a large importer of coarse grains--is expecting bumper crops this year. As a result, Mexico is currently expected to scale back imports to less than 5 million tons from close to 8 million last year. Brazil, which has been an importer over the past several years, will attempt not to import corn this year because of balance of payments difficulties. Production is being given strong incentives through support prices and a recent supply agreement signed with the USSR. Imports by Egypt are expected to rise again this year to support a developing poultry industry, and both Morocco and Algeria, which had poor crops, should increase import levels. Venezuela is also seeking record imports due to crop difficulties and firm feed demand. China, which was a large importer of corn several years ago, has scaled down its imports in favor of increased wheat purchases.

Other Exporters Up Production and Exports

World feed grain trade is forecast to increase in 1981/82. However, as a result of record or near-record production in major exporting countries other than the United States for 2 consecutive years, these countries may account for most of the increased trade in the July-June 1981/82 year. This is a marked departure from the past several years, when the United States provided virtually all of the increase in world trade, and reflects a sharp increase in acreage in these other exporting countries. Farmer expectations in these countries have been lifted, in part due to the high prices of late 1980, but also as a result of long-term supply agreements and/or large sales to the USSR over the past year and a half.

Canadian coarse grain acreage was increased 15 percent this year to the highest level since the early 1970's, and, with favorable growing conditions, production is up 18 percent. Exports, mostly barley, are expected to rise about 1 million tons to 5 1/2 million tons, but the final volume of exports will depend upon Canada's ability to meet an overall export target of 26 million tons of all Western grains and oilseeds and the absence of handling, transportation, or shipping difficulties. Thailand has also reaped a record coarse grain crop, mostly corn, up 18 percent from 1980/81, and exports should be increased to at least 2.5 million tons. However, Thailand has been encountering difficulties over prices with several traditional buyers.

In the Southern Hemisphere, the Argentine corn and grain sorghum crops are still in the process of being planted, but early indications were for some decline in area as farmers shifted land to wheat or oilseeds, and livestock prices were encouraging more pasturing. The early indications were for about a 5-percent decline in area; if yields are more normal than last season's, when records were broken, a 15-20 percent decline in production had been expected. The recent dry spell has delayed corn planting and cast some doubts on these earlier expectations. On a July-June 1981-82 trade year, however, exports will still be increased because of the record crops gathered in early 1981. The current forecasts are for an increase of nearly 3.5 million tons over 1980/81 to about 13.5 million tons. The Australian barley crop appears to have been less affected by the recent dryness in that country than wheat; based on a 14-percent increase in area, production is currently forecast to rise 35 percent from last year's drought-affected level. Exports, as a result, are expected to be stepped up about 1 million tons to 5 million.

Outlook and Uncertainties

For the balance of the 1981/82 season and the early outlook for 1982/83, the following are some of the developments that will influence trade flows, U.S. exports, and grain prices:

- Soviet purchases. -- The final level and timing of these purchases, along with the balance between coarse grain and wheat and among alternative suppliers will have a strong bearing on world trade flows and the level of U.S. exports. For example, if Soviet purchases of coarse grains are larger than now anticipated, this could be a further boost to U.S. export prospects, but if purchases are smaller or larger from alternative suppliers, this could weaken U.S. prospects.
- The early 1982 Southern Hemisphere crops. -- There is a high degree of uncertainty about the coming Argentine corn and grain sorghum crops as a result of a dry spell that has curtailed corn plantings. If rains are not forthcoming shortly, the corn output potential will be reduced significantly, but if subsequent moisture does come, soybean and grain sorghum prospects could be enhanced. The availabilities of Argentine corn and grain sorghum will have a significant bearing on Soviet purchasing decisions and on U.S. export levels to the Soviet Union as well as for both grains worldwide.
- Economic conditions and demand for livestock and feed products. -- Demand for feed grains is always hard to judge, and it is frequently difficult to predict when turnarounds may occur. At the current time, demand is generally considered to be sluggish, but it is possible that turnarounds in some countries could come sooner than now expected. If so, this would be positive to the U.S. export picture. Also, it is possible that current price levels could help to stimulate livestock feeding or the feeding of coarse grains versus other substitutes.

- Price expectations, interest rates, and exchange rates. -- Given rather abundant grain supplies in the major exporting countries combined with high interest rates and a strong U.S. dollar, there is reason to believe that many buyers are purchasing on a hand-to-mouth basis. Any change in the supply outlook, especially as reflected in price expectations, could change the pace of export sales, especially of U.S. sales. If, for example, buyers were to perceive that supplies were to be less plentiful in the future, prices could strengthen and sales could quicken.
- Prospects for the 1982 U.S. crops. -- The early indications for the 1982 U.S. crops will have a bearing on prices and U.S. exports. If early indications point to continued abundant supplies, this could limit price strengthening, which might stimulate demand but could also cause buyers to continue hand-to-mouth buying. Prospects for reduced supplies could cause buyers to begin to cover their needs earlier.
- Prospects for the 1982 Soviet crops. -- The Soviet Union has had three successive poor crops, and imports have been increased each year to record levels. Regardless of the outcome of the 1982 Soviet grain crops, large imports will be needed to maintain demand and rebuild stocks. However, if Soviet crop prospects are favorable, there could be some lessening in the pressures to maintain record import flows in 1982/83. But if crop prospects are not favorable, continued record imports will be needed. In either case, Soviet grain imports and world grain trade should continue large over the near-term.

U.S. Feed Grain Outlook

Record Feed Grain Crop to Boost Supplies

Favorable growing conditions this summer dramatically improved feed grain prospects from early season expectations. In July, the U.S. crop was forecast at 219 million tons, up substantially from last year's poor output, but well below the record 1979 harvest. There was particular concern about the eastern Corn Belt crop, planted much later than normal. Also, parts of Nebraska and western Iowa were extremely dry. However, as the season developed, timely rainfall and slightly above-normal temperatures benefited feed grains in virtually all areas. Production forecasts increased each month, and as of October 1, the U.S. feed grain crop was forecast at a record 245 million tons, up 24 percent from last year, and 3 percent from 1979.

Although carryin stocks are 18 million tons below a year ago, the record crop will boost supplies 12 percent from 1980/81. Total feed grain supplies of 280 million tons are only 5 million below the record 1979/80 level.

The 1981 corn crop is forecast at a record 8.08 billion bushels, 22 percent higher than a year ago, and 2 percent above the previous record in 1979. The big increase from last year reflects a near-record yield and slightly higher harvested acreage. The national average yield of 109 bushels per acre is second only to the 1979 yield of 109.7 bushels. Of the major producing states, yields are at record levels in Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, and Wisconsin. The sharpest yield reduction is in Ohio, where delayed planting seriously reduced prospects. Ohio's 95-bushels-per-acre yield is off 19 bushels from the last two years' average.

Carryin stocks of corn for the 1981/82 marketing year are nearly 600 million bushels below a year ago, mainly because of last year's drought-reduced crop. However, this year's record will offset the drop, and corn supplies are forecast to be up one-tenth to 9.1 billion bushels.

Harvests of the other feed grain crops also are expected to be well above last year. The sorghum crop of 877 million bushels is the largest since 1973, and is 49 percent above last year's small harvest. The sorghum yield is forecast at a record 64 bushels per acre, and harvested acreage is up nearly 1 million from 1980. Barley production of 476 million bushels is up 33 percent from 1980, and is the biggest crop since 1958. The barley yield of a record 52.5 bushels per acre is 3 bushels higher than last year, and 1-1/2 higher than the previous record. Oats production is up 11 percent from last year.

Domestic Use and Exports to Increase

Large supplies and lower expected feed grain prices, and some improvement in livestock feeding margins will increase feed use in 1981/82. Also, more normal winter weather compared with last year's mild conditions would raise feed requirements. For 1981/82, feed use of feed grains is projected at 130 million tons, 6 percent above 1980/81, but still 6 percent below 1979/80.

A slight increase in fed beef production and larger broiler production will account for most of the increase in feeding this year as pork production could be down more than 5 percent for the feed year. The number of cattle on feed on October 1 was down 9 percent from a year ago due to larger marketings during the past few months and low placements. Favorable pasture conditions, poor feeding margins, and high interest costs have caused placements to lag. However, with large availabilities of lower-priced feeds, some moderating in interest rates, and slightly higher fed cattle prices later in the feed year, feeding activity will pick up and fed beef production may increase slightly during the 1981/82 feed year.

Broiler production was up about a tenth this summer, and will likely remain 2-4 percent above a year ago during the first half of the feed year. Broiler prices have dropped in recent months because of the large supplies, and the increase in production may be lower during the second half of the feed year. For the year, production may be up 1-3 percent, a slightly slower rate of growth than in the past two years.

Feeding margins for many hog producers during much of 1980 and the first half of 1981 were negative, causing a 4-percent cutback in farrowings during June-August, and an expected 6 percent drop during September-November. The inventory of 60-180 pound market hogs was down 8 percent from a year earlier on September 1. The smaller inventory combined with the expected decline in Sept.-Nov. farrowings will likely result in a 7-9 percent drop in pork production during the first half of the feed year. For the last half of the feed year, pork production may be down only slightly compared with a year earlier. Producers have reported only a 1-percent-decline in farrowing intentions for December-February, reflecting falling grain prices and stronger hog prices during the summer.

Feed use of corn in 1981/82 is projected up about 3 percent from 1980/81 with bigger gains expected for sorghum and barley. Farm prices for these grains have been low relative to corn which will likely result in additional feeding at the expense of corn.

U.S. export prospects appear favorable for 1981/82. Poor crops in the Soviet Union and Western Europe increased their import requirements. The USSR may purchase about half of its estimated record coarse grain imports of 24 million tons from the United States. Taiwan and South Korea will likely import more grain for expanding poultry and livestock industries. On the other hand, prospects for larger crops in Eastern Europe, Mexico, and Brazil may reduce their imports. For the 1981/82 marketing year, feed grain exports are projected at a record 74 million tons, up 4 million from 1980/81, and 3 million higher than the previous record of 1979/80. Corn exports are expected to be up more than 3 million tons with the balance of the increase in sorghum and barley. Large supplies and low sorghum and barley prices could result in record exports this year.

Food, seed, and industrial use of feed grains will increase this year, particularly because of increased use of corn for production of gasohol and high fructose corn syrup. Total domestic use and exports of feed grains in 1981/82 is projected at 230 million tons, up 6 percent from 1980/81, and only slightly below the 1979 record.

Stocks to Build

Despite the expected increase in both domestic use and exports, total use of feed grains in 1981/82 is likely to fall well short of the record production. As a result, feed grain stocks in 1981/82 are likely to build to 50 million tons, up 15 million from 1980/81, but 3 million below 1979/80. The stocks-to-use ratio in 1981/82 of 22 percent compares with 16 percent in 1980/81 and an average of 22 percent during 1977-79.

Corn will account for most of the increase in feed grain stocks. By the end of the marketing year, corn stocks are likely to total 39 million tons (1.54 billion bushels), only the second time since 1965 that stocks will have exceeded 33 million (1.3 billion bushels). Sorghum stocks in 1981/82 may increase more than 2 million tons from the low 1980/81 level.

Much of the increase in feed grain stocks in 1981/82 will be isolated from the market in the farmer-owned reserve program. With grain market prices at or below loan rates in many areas, placing grain in the reserve may be an attractive alternative to selling the grain at harvest time. There likely will be about 17 million tons of feed grains in the farmer-owned reserve at the end of the 1981/82 marketing year, with corn making up about 90 percent of the total. The reserve was drawn down to 5 million tons in 1980/81. Market prices are not likely to hit reserve trigger levels during the year, so producers may not have an opportunity to remove the grain from reserve.

There are about 7 million tons of feed grains in Commodity Credit Corporation (CCC) inventory, 6 million of which are corn. This grain was acquired as a result of loan forfeitures from the 1977 and 1978 crops, and direct purchases from farmers after the grain embargo in 1980. There may be some loan forfeitures of 1980 crop corn during the next few months, but the quantities are likely to be small--perhaps less than 20 million bushels.

Grain Prices Below Record 1980 Levels

Feed grain prices have fallen sharply since early summer, weakened by prospects for record crops, and sluggish export demand. Farm prices of corn fell from \$3.17 per bushel in June to around \$2.50 per bushel by the end of October, a drop of more than 20 percent. Prices for sorghum and barley have also followed a similar pattern. Prices for corn in the next couple of months may improve slightly over current levels as grain moves into the reserve program and harvest pressure subsides. For the fall quarter, corn prices may average from \$2.50-\$2.60 per bushel, down from the \$3.09 fall quarter average for 1980.

Prices will likely improve seasonally as the winter progresses. Exports are likely to pick up from current low levels, and grain reserve placements should help to strengthen prices. Later in the marketing year, some price strength could come from the feed sector, where the number of cattle on feed should be up from a year earlier, and broiler production is also likely to be up.

For the 1981/82 crop year, corn prices at the farm are projected to average from \$2.60-\$2.90 per bushel compared with the record \$3.10 for the 1980 crop and \$2.52 in 1979/80. Sorghum prices are likely to average from \$2.40-\$2.60 per bushel, down from \$2.95 in 1980/81. Barley prices will average well below the \$2.91 per bushel of 1980/81, perhaps in a range of \$2.35-\$2.50.

1981 Program Provisions

Loan rates and target prices for the 1981 feed grain crops are above those of 1980. The table below summarizes the program's provisions:

Loan Rates, Target Prices, and Reserve Trigger Levels

Commodity	1980 crops				1981 crops			
	Regular loan	Reserve loan	Target Price	1/ Reserve release and call	Regular loan	Reserve loan	Target price	Reserve trigger
			- - - - - Dollars per bushel - - - - -					
Corn	: 2.25	2.40	2.05/2.35	2.81/3.26	2.40	2.55	2.40	3.15
Sorghum	: 2.14	2.28	2.45/2.50	2.68/3.10	2.28	2.42	2.55	3.00
Barley	: 1.83	1.95	2.29/2.55	2.29/2.65	1.95	2.07	2.60	2.55
Oats	: 1.16	1.23	---	1.45/1.68	1.24	1.31	---	1.60

1/ Producers who planted within their normal crop acreages were eligible for the higher target prices.

On October 6, USDA Secretary John R. Block announced that farmers could immediately enter their 1981 corn, sorghum, and barley crops into the farmer-owned grain reserve. In addition to receiving a higher loan rate for grain placed in reserve, producers also will receive a prepaid annual storage payment of 26-1/2 cents per bushel. Interest charges are waived for the second and third years that grain is in the reserve.

Market prices for sorghum and barley have been below the 1981 target prices, so deficiency payments likely will be paid to sorghum and barley producers. Barley payments will be made in December, while sorghum payments, if necessary, will be made in April. There will be no deficiency payments for the 1981 corn crop.

At this writing in late October a new farm bill has not yet been signed by the President, and it is unclear what legislative authority will be in effect for the 1982 feed grain program. Provisions likely will be announced shortly after the bill's passage. The House bill contains a provision mandating announcement of the set-aside decision by November 1 each year.

Both the House and Senate bills raise loan rates and target prices for the 1982 feed grain crops. The final levels will be worked out in a conference committee.

U.S. FEED GRAINS AND CORN 1/

Commodity	: 1979/80	: 1980/81	: 1981/82 Projections		
	:	: Estimated	:	:	Probable
	:	:	Oct. 13	Oct. 23	variation 2/

FEED GRAINS:					
Area	:	Million acres			
Planted	: 118.8	121.7	123.8	123.8	
Harvested	: 102.5	101.6	106.5	106.5	
Yield per harv.	:	Metric tons			
acre	: 2.32	1.95	2.30	2.30	
	:	Million metric tons			
Beginning stocks	: 46.2	52.4	32.3	34.6	
Production	: 238.2	198.2	245.3	245.3	+8/ -8
Imports	: .3	.3	.3	.3	
Supply, total	: 284.7	250.9	277.9	280.1	+8/ -8
Feed and residual	: 138.7	122.5	129.9	130.1	+10/-10
Food, seed, & ind.	: 22.3	24.1	26.1	26.1	+1/ -1
Domestic, total	: 161.0	146.6	156.0	156.2	+10/-10
Exports	: 71.3	69.7	74.1	74.1	+6/ -6
Use, total	: 232.3	216.3	230.1	230.3	+14/-14
Ending stocks, total	: 52.4	34.6	47.8	49.8	+10/-10
Farmer-owned res.	: 17.5	5.1	16.8	16.8	
CCC inventory	: 7.7	7.2	7.2	7.2	
Free stocks	: 27.2	22.3	23.8	25.8	
CORN:					
Area	:	Million acres			
Planted	: 81.4	84.1	84.3	84.3	
Harvested	: 72.4	73.1	74.1	74.1	
Yield per harv.	:	Bushels			
acre	: 109.7	91.0	109.0	109.0	
	:	Million bushels			
Beginning stocks	: 1,304	1,617	996	1,034	
Production	: 7,939	6,648	8,081	8,081	+317/-315
Imports	: 1	1	1	1	
Supply, total	: 9,244	8,266	9,078	9,116	+315/-315
Feed and residual	: 4,519	4,112	4,250	4,250	+350/-350
Food, seed, & ind.	: 675	750	825	825	+35/ -35
Domestic, total	: 5,194	4,862	5,075	5,075	+365/-365
Exports	: 2,433	2,370	2,500	2,500	+200/-200
Use, total	: 7,627	7,232	7,575	7,575	+500/-500
Ending stocks, total	: 1,617	1,034	1,503	1,541	+350/-350
Farmer-owned res.	: 636	190	600	600	
CCC inventory	: 256	240	240	240	
Free stocks	: 725	604	663	701	
Avg. farm price 3/	: 2.52	3.10	2.60-2.90	2.60-2.90	

1/ Marketing year beginning October 1 for corn and sorghum; June 1 for barley and oats. 2/ The "probable variation" reflects the root mean square error and/or standard error of estimate from trend and judgment. Chances are about 2 out of 3 that the outcome will fall within the implied ranges. 3/ Season average farm price, dollars per bushel.

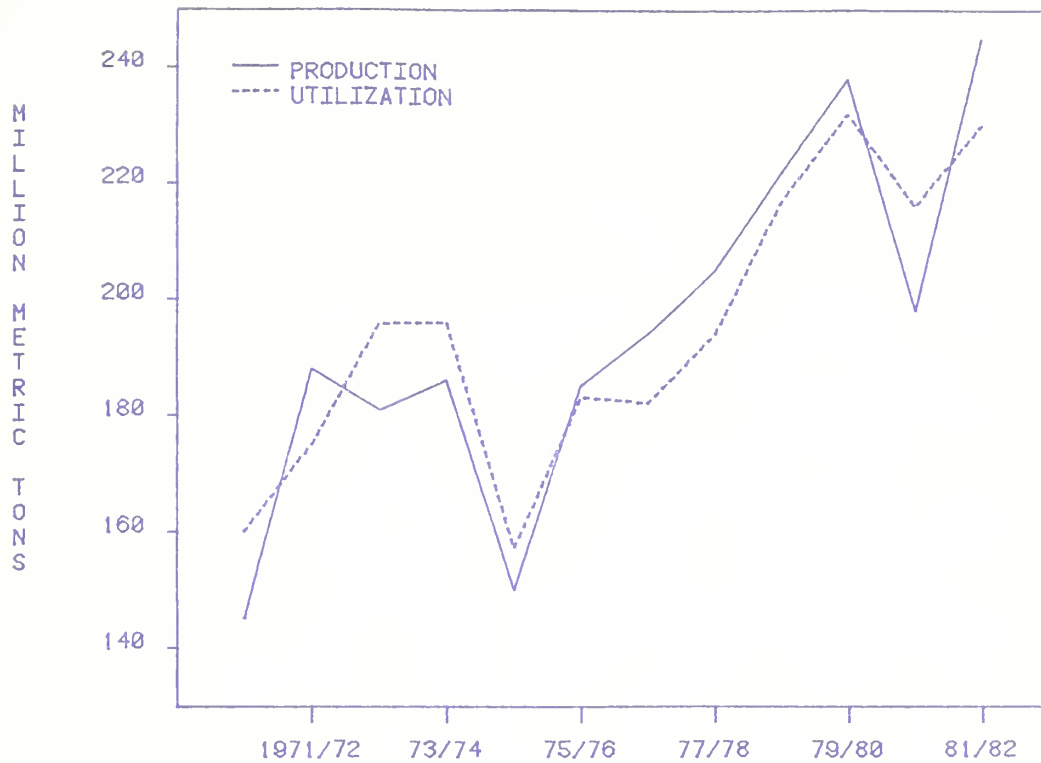
U.S. SORGHUM, BARLEY AND OATS 1/

Commodity	: 1979/80	: 1980/81	: 1981/82 Projections			
	:	: Estimated	:	:	:	Probable
	:	:	: Oct. 13	: Oct. 23	:	variation 2/

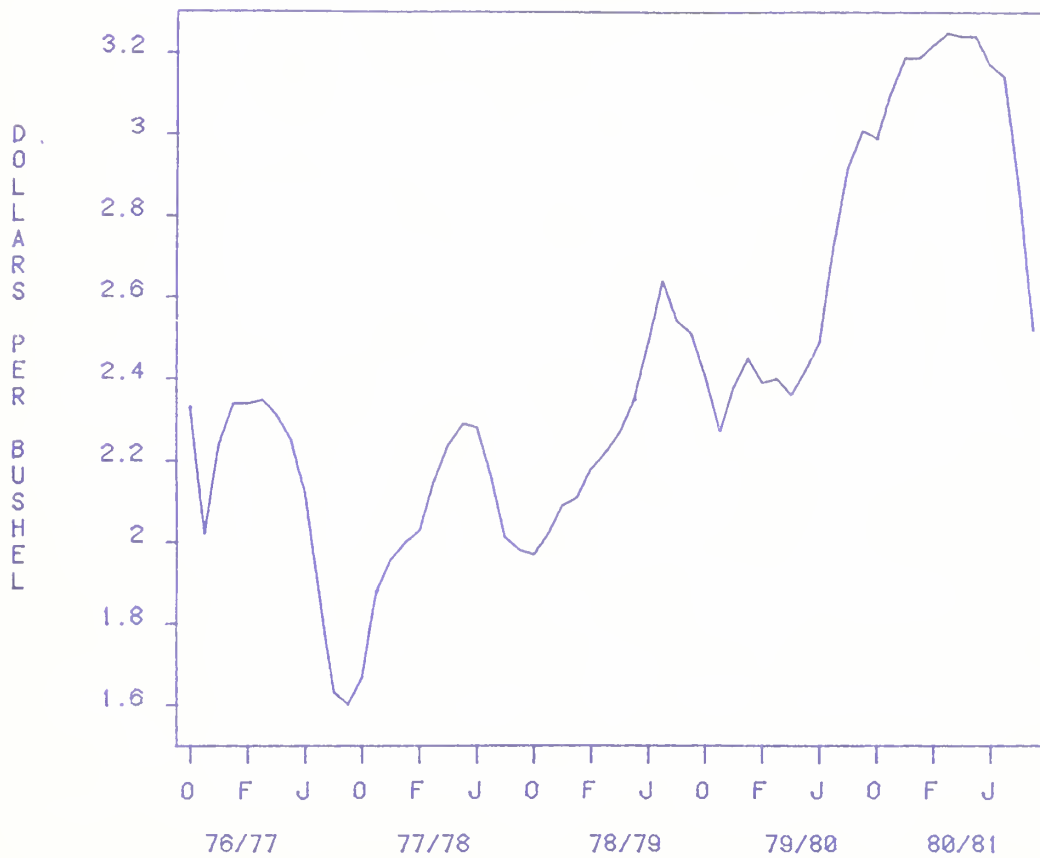
SORGHUM:	:	Bushels				
Yield/harv. acre	: 62.7	46.2	64.4	64.4		
	:	Million bushels				
Beginning stocks	: 160	147	59	109		
Production	: 809	588	877	877		+40/-40
Imports	:					
Supply, total	: 969	735	936	986		+40/-40
Feed and residual	: 484	315	450	450		+40/-40
Food, seed, & ind.	: 13	11	11	11		
Domestic, total	: 497	326	461	461		+40/-40
Exports	: 325	300	325	325		+35/-35
Use, total	: 822	626	786	786		+65/-65
Ending stocks	: 147	109	150	200		+45/-45
Avg. farm price 3/	: 2.34	2.95	2.40-2.60	2.40-2.60		
BARLEY:	:	Bushels				
Yield/harv. acre	: 50.9	49.6	52.5	52.5		
	:	Million bushels				
Beginning stocks	: 228	192	137	136		
Production	: 383	359	476	476		
Imports	: 12	10	10	10		
Supply, total	: 623	561	623	622		
Feed and residual	: 204	176	200	200		+25/-25
Food, seed, & ind.	: 172	172	175	175		+5/-5
Domestic, total	: 376	348	375	375		+25/-25
Exports	: 55	77	100	100		+15/-15
Use, total	: 431	425	475	475		+35/-35
Ending stocks	: 192	136	148	147		00/-30
Avg. farm price 3/	: 2.29	2.91	2.35-2.50	2.35-2.50		
OATS:	:	Bushels				
Yield/harv. acre	: 54.4	53.0	52.8	52.8		
	:	Million bushels				
Beginning stocks	: 280	236	176	177		
Production	: 527	458	509	509		
Imports	: 1	1	1	1		
Supply, total	: 808	695	686	687		
Feed and residual	: 492	431	425	435		+30/-30
Food, seed, & ind.	: 76	74	75	75		
Domestic, total	: 568	505	500	510		+30/-30
Exports	: 4	13	10	10		+5/-5
Use, total	: 572	518	510	520		+30/-30
Ending stocks	: 236	177	176	167		+25/-25
Avg. farm price 3/	: 1.36	1.82	1.75-1.90	1.75-1.90		

1/ Marketing year beginning October 1 for sorghum, June 1 for barley and oats.
2/ The "probable variation" reflects the root mean square error and/or standard error of estimate from trend and judgment. Chances are about 2 out of 3 that the outcome will fall within the implied ranges. 3/ Season average farm price, dollars per bushel.

U.S. FEED GRAIN PRODUCTION AND UTILIZATION



U.S. FARM PRICE OF CORN (OCT-SEP YEAR)



OUTLOOK FOR FEEDGRAINS

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Discussant

1982 Agricultural Outlook Conference, Session #5, Tuesday, November 3
Washington, D.C.

The theme of this Conference appears to be "What a difference a year makes." This is certainly true in terms of the world outlook for corn and other feedgrain supplies. It is also true in terms of the economic outlook. As Donald Regan, the U.S. Treasury Secretary stated yesterday, the Administration now expects the U.S. economy to grow at a much slower rate than previously expected in 1982. At the same time, the cost of money is still very high, and, in spite of the current downtrend in interest rates, it is difficult to foresee rates below the mid-teens in light of expanded Treasury borrowing requirements, unless the economy weakens much more than the Administration's forecasts (thus reducing commercial borrowing needs). High interest rates are impacting feedgrain demand for many reasons, including the cost of carrying stocks. One point worth making here is that the CCC's export credit guarantee program (GSM 102) should be affected as long as interest rates in the U.S. remain high and there are other sources of financing available in the world.

It is worth remembering also that the price of corn is not as low to foreign buyers as it may seem in dollar terms. Looking at the current price of corn CIF Rotterdam, prices have fallen around \$35/mt or 21% in the past year. However, in terms of purchasing power for Germany, the drop has been only 5%; in the case of Japan, just over 10%. Clearly, the strong moves in both currency values and interest rates are continuing to affect both grain prices and demand in recent years much more than in the past, when there was a much higher degree of stability. Yet, it seems to me that as much as these negative economic and monetary considerations are affecting the downward bias of the market, political factors have had equal impact in the past season.

Secretary Block stated yesterday that we have put the concept of embargoes behind us. However, the general level of political tensions between the U.S. and the Soviet Union is not conducive to "normalized" grain trade. This appears the case in spite of the very generous U.S. position at recent

consultations in Moscow at which the U.S. offered the Soviets an additional 15 mln metric tons (mt) of grain during the current agreement year (Oct/Sept). Moreover, talks on a new long term agreement (LTA) are stalled, with no real prospect for the talks to begin until early 1982.

While I strongly believe that the Soviets will buy U.S. grain in substantial quantities when they need it, the grain embargo and its aftermath which triggered expanded production in other exporting countries, also removed the U.S. advantage in Soviet trade. The U.S. has moved from the position of the preferred supplier to the Soviets to one of residual supplier. The current U.S.D.A. estimate of 43 mln mt of grain imports by the U.S.S.R. in the July/June marketing year appears too high, while the forecast that the U.S. will supply roughly 12 mln mt of corn within that total could also be optimistic. We currently believe that total Soviet grain imports may have difficulty reaching 40 mln mt on a July/June basis-- with 43 mln mt on an Oct/Sept basis possible, but not necessarily probable.

The Soviets' shipping program to-date suggests that even those figures could be high. While they were able to clear a record 3.8 mln mt/mo in September (grain, soybeans, meal, tapioca, etc.), the pace has slowed for October and is expected to be lower in the Nov/Dec period when imports should be heavy to increase stocks for winter feeding requirements and take advantage of moderate weather ahead of winter ice conditions. While July/Aug/Sept imports averaged 3.5 mln mt/mo from all origins, Oct/Nov/Dec could be at 3-3.1 mln mt/mo; the winter quarter should be no greater than 3.3-3.4 mln mt/mo. This would mean that 4.4 mln mt/mo would be the necessary average in the April/June quarter for the Soviets to reach 43 mln mt. The Soviets clearly do need to maximize their imports, but deferrals due to internal logistical constraints (causing big back-ups in ports), financing problems (the weakness of gold vs the dollar) and other policy decisions suggest that there is still not the "will" to make this record import program possible.

The Soviets' low level of corn purchases to-date from the U.S. is likely due to large supplies and the low price outlook (i.e., there is no hurry to buy). It would also appear that the Soviets would be reluctant to enter the market too eagerly or heavily (unless they perceived it necessary) ahead of negotiations for a new LTA, since they would hope to go into the talks

with a strong position in hopes of having as much leverage as possible. Certainly, the big uncertainty today is the Argentine crop, and if weather conditions worsen and indicate a sharply reduced coarse grain harvest, the Soviets would likely begin to purchase U.S. corn more aggressively. It is worth noting, however, that even if the Argentine corn crop drops to 9-10 mln mt, as is indicated by current weather conditions (vs 13 mln mt last year), exports in the July/June year would not likely drop below the 9 mln mt currently anticipated. This is because most exports would move early in the season before July 1, although exports in the Argentine's March/Feb crop year could range at only 5.6-6.6 mln mt. We would expect Oct/Sept export levels to be in the 7-7.5 mln mt range if production is at the low end of present estimates.

Uncertainty for the feedgrain sector also centers on Eastern Europe. While corn prices last season did not reach anticipated high levels (based on supply fundamentals) due to major economic developments, I believe that it is worth considering the impact on the marketplace of the Polish crisis. As far back as last December, I remember the market weakness in the face of rumors of potential Soviet intervention. The grain embargo of January, 1980 is well-remembered and the hard-line rhetoric from the current Reagan Administration continues to raise embargo concerns in the trade. Export companies are not willing to take big long-term long positions in the markets in the face of this big potential uncertainty which would very much affect the structure of the marketplace in a significant, far-reaching way.

While the Polish political crisis has continued now for more than a year, though the threat of Soviet intervention appears even less likely today, the economic crisis there is a further adverse factor for feedgrain demand. There is no GSM 102 credit guarantee program for Poland, a country which received roughly one-third of the guarantees in 1980/81. New ways will be needed to finance Poland's import needs (both short and long term). One suggestion for emergency assistance might be zloty sales from the government's (CCC) corn stocks, although this move could be opposed by exporters. The Polish crisis is causing credit problems for several other Eastern Bloc countries--Romania, Czechoslovakia, etc--which will be a limiting factor on livestock expansion, and, hence, the growth in feedgrain import demand.

The U.S.D.A. is looking optimistically toward Asia for growth in feedgrain imports; however, Japanese companies are currently very negative about growth in feed demand in light of the current economic outlook. Certainly, much of this optimism on the part of the U.S.D.A. will depend upon a more buoyant economy. If it does not begin to occur in the U.S. until the last half of 1982, then the lag time affecting other consuming nations could mean that any real recovery in feed demand may not take place until later in the year, possibly not until 1983. This could be particularly the case if the dollar remains strong and the cost of borrowing very high.

One positive development that may be down the road (though not this year) may be the Chinese market. There are reportedly today signs of the Chinese government's interest in expanding or developing coarse grain imports for use in animal feeding. General incentives to the population to work harder, pressure on the government to improve living standards, and the decision to shift acreage to cash crops from grain production all may be factors in this potential development.

But, for the time being, sluggish foreign demand and record U.S. supplies suggest that the U.S.D.A.'s export estimate may be a bit optimistic. A longer and deeper recession, forecast by some analysts, would further negatively impact domestic demand. This could mean a carryover of close to 1.7 bln bus, rather than the 1.5 bln projected at the end of the 1981/82 crop year. And, in spite of low prices, large yields this season could encourage big acreage again in the spring.

The implication of another large potential crop on U.S. farm policy would be great in terms of outlays from the federal budget. Going into conference committee this week, the proposed farm bills would mean around a 20 cent/bushel differential between the corn loan and target price for 1982 (\$2.50/2.70 in the Senate bill). Potential large deficiency payments if world stocks build into next year would suggest pressure by the Office of Management and Budget (OMB) for some type of feedgrain set-aside or paid diversion program in coming weeks. While the U.S.D.A. would oppose this, it may well be forced to consider such measures if the Argentine crop remains stable, the economy weak and prices depressed.

To conclude, though, on a positive note, remember a year can make a big difference.

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Because of the adverse weather last winter and spring, the fruit industry in the 1981/82 season will reverse the upward trend in production of the past several year. However, the bearing acreage for most fruits continues to increase; so the resumption of increased production is still likely in the years ahead. Production of both citrus and noncitrus is expected to be smaller than last year. Substantial decreases in production of apples, grapes and oranges are likely to hold grower prices relatively high. Higher contract prices and good demand should also boost grower returns. Overall, with smaller supplies and substantially higher prices, grower returns will increase moderately and the fruit industry will have another profitable year. With the moderate rate of increase in costs of inputs, profits are expected to be above those of 1980/81.

The smaller supply combined with rising costs of marketing will continue to push up retail fruit prices. Cost of marketing have increased steadily almost in every category this year. According to the U.S. Department of Agriculture, labor costs for food retailing have risen almost 9.2 percent from a year earlier. Transportation rates, a major component of fresh fruit marketing cost, have increased 11.6 percent from a year ago. Including all other items, the index of food marketing cost rose to 292.5 (1967=100) in September 1981, an increase of 10.4 percent from last year. However, the sluggish economy may moderate price increases. Furthermore, there will probably be occasional promotional reductions for some processed items, particularly canned fruit and citrus juice, in supermarkets during 1981/82 because supplies are expected to be adequate to meet market needs.

GENERAL PRICE OUTLOOK

Prices received by growers for fresh and processing fruit so far this year have averaged moderately lower than last year, primarily reflecting decreased prices of noncitrus fruit. The September index, at 122 (1977=100), was almost 5 percent below a year ago because of lower prices for apples, pears, and strawberries. However, citrus prices received by growers have been substantially higher than a year earlier. But, with smaller supplies of apples and pears, in addition to reduced supplies of oranges in prospect, the price index is expected to advance this winter to levels above a year ago.

With the sluggish economy and adequate supplies of summer fruit, the increase in retail prices of fresh fruit has been moderate this summer. The third quarter 1981 index of consumer prices for fresh fruit averaged 302 (1967=100), only 4 percent above a year ago. As supplies of fresh apples and citrus increase seasonally, retail prices are expected to decline this fall. However, the higher costs of marketing will keep retail prices still moderately higher than a year earlier.

Table 1.--Index of quarterly prices received by growers for fresh and processing fruit

Year	1st	2nd	3rd	4th	Annual
(1977=100)					
1977	88	93	98	123	100
1978	116	135	160	181	148
1979	134	145	155	142	144
1980	124	131	125	127	127
1981	118	128	119	126 <u>1/</u>	123 <u>1/</u>

1/ Estimated
SOURCE: Agricultural Prices, CRB, SRS.

Table 2.--Quarterly consumer price index for fresh fruit

Year	1st	2nd	3rd	4th	Annual
(1967=100)					
1977	172	190	193	185	185
1978	194	222	247	221	221
1979	218	251	279	246	248
1980	238	265	290	261	264
1981	256	276	302	278 <u>1/</u>	278 <u>1/</u>

1/ Estimated.
SOURCE: Bureau of Labor Statistics. U.S. Department of Labor.

Fresh Citrus Fruit

The first forecast of the U.S. citrus production (excluding grapefruit in California's "other" areas) for 1981/82 is estimateed at 14.4 million tons, down 4 percent from a year earlier and 12 percent below the 1979/80 record. As of October, smaller crops are indicated for oranges, lemons, and tangerines.

Table 3.--U.S. Citrus Fruit Production: 1979/80, 1980/81
and indicated 1981/82

Crop	1979/80	1980/81	1981/82
1,000 short tons			
Oranges	11,832	10,524	9,562
Grapefruit <u>1/</u>	2,986	2,759	2,969
Lemons	789	1,208	1,143
Limes	44	48	52
Tangelos	288	221	248
Tangerines	275	239	237
Temples	270	162	189
Total <u>1/</u>	16,484	15,161	14,400

1/ Excludes California grapefruit in "other areas."

SOURCE: Crop Production, CRB, SRS.

Oranges

October 1 prospects point to an orange crop of 221 million boxes, 10 percent below last season's crop and down 19 percent from the 1979/80 record. In Florida, the forecast for production of all oranges calls for 166 million boxes, 4 percent below last season's freeze-damaged crop, becuae smaller output of early and mid-season varieties more than offset larger production of Valencias. If current prospects are realized, Florida will produce 78 percent of the US. orange crop, compared with 74 percent last season. California expects a crop of 47 million boxes, 29 percent less than last season's record and 21 percent below 1979/80. In contrast, orange production in Texas is forecast at 5.4 million boxes, 25 percent above the 1980/81 crop, while the Arizona crop, 2.65 million boxes, is up only 2 percent from last season.

Fresh orange prices at all levels so far this season have been substantially above a year ago. The sharply smaller crop prospects for 1981/82, particularly from California, will keep prices of fresh oranges high. In addition, reduced competition from smaller crops of apples and pears will further strengthen orange prices. Current prospects through winter point to grower prices moderately to substantially higher than last year's increased levels. These prices will be reflected at retail level in the months ahead.

Foreign demand for fresh oranges declined during 1980/81. A sharp decrease in shipments to Europe was chiefly responsible. With the smaller U.S. orange crop and higher prices, prospects for U.S. exports of fresh oranges may not be favorable during the coming months.

Grapefruit

October 1 prospects for U.S. grapefruit production excluding California's "other areas" point to a crop of 72.1 million boxes, 13 percent above last season and 3 percent more than 1979/80. Larger crops from Florida and Texas are chiefly responsible.

Florida's total grapefruit forecast of 55 million boxes is 9 percent above last season. The Texas crop, 10.5 million boxes, will be up 57 percent from the previous season's total. Arizona growers expect to harvest 2.6 million boxes, compared with 2.8 million last season. Prospective production in California's desert areas, at 4 million boxes, will be down 6 percent from 1980/81.

Reflecting a larger crop, shipments of fresh grapefruit are running well ahead of last year's pace. Demand for grapefruit is likely to be good. Although stocks of several processed grapefruit products are above last year's levels, they are not burdensome. Processor demand is still expected to be relatively good. Thus, if export demand remains relatively good, the larger crop is not likely to exert downward pressure on prices. Furthermore, the smaller orange crop probably will boost grapefruit prices.

Lemons

The California-Arizon lemon crop for 1981/82 is expected to total 30.1 million boxes, 5 percent below last year's record, but still 45 percent larger than 1979/80 production. The crop in California, which produced 24.8 million boxes last season, is forecast at 22.3 million boxes. The quality of the fruit is good. Arizona's crop is expected to total 7.8 million boxes, 11 percent greater than the large crop harvested last season.

Because of the smaller crop total movement through mid-October was considerably behind last year's pace. However, deliveries to the fresh market have been substantially larger than a year ago. Despite increased movement for fresh sales, f.o.b. prices for fresh lemons have averaged \$11.62 a carton, compared with \$10.61 a year earlier. Prices will decline as the season progresses but are likely to average above last year's lows.

PROCESSED CITRUS FRUIT

Because of the sharply smaller Florida citrus crop, the quantity for processing use totaled 11.3 million tons in 1980/81, down 9 percent from 1979/80. However, processing still accounted for 75 percent of the total, the same as 1979/80. Processing uses were down for all citrus crops except lemons and limes. More than four-fifths of the oranges were processed, as were 60 percent of the grapefruit and 64 percent of the lemons.

Florida's 1980/81 pack of frozen concentrated orange juice (FCOJ) totaled 174.5 million gallons (excluding reprocessed gallons), off 25 percent from the preceeding season. The smaller pack was caused by the January freeze, which seriously reduced production and the juice yield. Processors recovered only 1.21 gallons a box at 43.4 degree brix equivalent, compared with 1.39 gallons for the 1979/80 crop. However, because of the sharply larger carryover and heavy imports, the total supply of FCOJ still exceeds last year's.

Despite the price escalation after the freeze, movement of FCOJ has been good. F.o.b. prices for FCOJ (unadvertised brands) had been as low as \$2.70 a dozen 6-ounce cans before the January freeze and as high as \$4.45 afterward. The current effective price is \$4.25, compared with \$3.00 a year earlier. Even with good movement, the stocks on hand as of October 10 were up 12 percent from a year ago. It appears that carryover could approach 60 to 65 million gallons, compared with 57.3 million last season.

Even with a smaller Florida orange crop, a higher juice will result in a moderately larger pack of FCOJ in 1981/82. In addition, Florida packers will reduce the concentration of FCOJ brix to 42.0 degrees from 43.4 degrees, effective the start of the new packing season and the change will lead to additional pack.

FCOJ juice yield is forecast at 1.42 gallons a box compared with 1.26 gallons a box on a 42.0 degree brix equivalent in 1980/81. Thus, if imports remain large, the total supply of FCOJ will exceed last year's level. However, if demand continues good, the larger supply may keep prices relatively steady.

Reversing the upward trend, the total pack of chilled orange juice in Florida declined from the previous season. During 1980/81, Florida packers processed 213 million gallons of chilled orange juice (excluding single-strength reprocessed), compared with 235 million in 1979/80. The decrease was primarily caused by the smaller orange crop and lower juice yield. At the same time, total movement also fell, with decreases recorded for both domestic markets and exports. However, even with a large carryover and weak movement, the smaller pack has caused the year-end stocks to fall slightly below last year. With higher juice yield in prospect and ample supplies of FCOJ, the total pack of chilled orange juice is likely to resume upward during 1981/82. If movement remains relatively good, prices are likely to remain steady.

Fresh Noncitrus

The 1981 noncitrus crop, including major fruits, grapes, and cranberries, is forecast at 11.9 million tons, 15 percent below last year's record. Smaller production was recorded for all crops except nectarines, ranging from 1 percent for cranberries to 24 percent for grapes. Consequently, available supplies of apples and grapes will be smaller this winter than last, but those of pears will be adequate to meet market needs. Prices are expected to be firm throughout 1981/82.

Table 4.--U.S. Noncitrus Fruit: Total production, 1979, 1980, and indicated 1981

Crop	1979	1980	1981
		1,000 tons	
Apples	4,072	4,414	3,960
Apricots	144	119	108
Cherries, sweet	182	172	154
Cherries, tart	85	109	69
Cranberries	124	135	134
Grapes	4,989	5,595	4,245
Nectarines	172	193	200
Peaches	1,476	1,537	1,458
Pears	855	894	856
Prunes and plums	664	821	711
Total	12,763	13,989	11,895

SOURCE: Crop Production, CRB, SRS.

Apples

The final forecast for the 1981 U.S. apple crop was placed at 8.08 billion pounds. This is 10 percent less than last year's record and 3 percent below the 1979 crop. Apple crop prospects in the East show smaller productions for most major producing States, with an output of 2.73 billion pounds, 19 percent below last year. Prospects in New York and Pennsylvania are down 32 and 26 percent, respectively. In the Central States, the sharp decrease is attributed mainly to Michigan, with a crop of 680 million pounds, 24 percent below 1980. Prospects in the Western States show a mixed pattern, with the crop virtually the same as last year. Washington, the Nation's leading apple State, expects 2.95 billion pounds, off 2 percent from last year's record. At 620 million pounds, apple output in California, the second largest producing State in the West, is almost 20 percent larger than in 1980.

The smaller apple crop has resulted in shipments moderately behind last year's pace. Opening f.o.b. prices for fresh apples at major shipping points were generally sharply below last year's high levels. An increased shipment of 1980 apples from cold storages was chiefly responsible for exerting downward pressure on prices. However, prices have strengthened from those during the early season and are substantially above a year ago. A smaller crop and anticipated good foreign demand will be the principal contributing factors for higher prices of fresh apples. In addition, the sharply smaller California orange crop, particularly Navel, will further strengthen fresh apple prices. Processors will also aggressively bid up apple prices in the Central and Eastern States because of lower stocks of most processed apple items. The outlook for export demand for all apples is very encouraging because of sharply smaller crops from both Canada and the Western European countries. Exports to some other major areas are expected to remain strong, particularly to the Far East, the Middle East, and Latin America.

Cranberries

The 1981 U.S. cranberry crop is expected to be 2.68 million barrels, 1 percent less than last year's record but 8 percent more than 1979 production. Massachusetts, the leading producing State, expects to harvest 1.18 million barrels, fractionally less than a year earlier. Production in Wisconsin, the second largest cranberry State, is forecast at 1.04 million barrels, down 4 percent from 1980. Season-opening prices for fresh cranberries from both Massachusetts and Washington in the Chicago wholesale market were considerably higher than a year ago. They are expected to decline as the season progresses. With the smaller crop and good demand in prospect, prices received by growers are projected to average above last year's level. F.o.b. prices for canned cranberry sauce have also been moderately higher than last year. Prices will remain higher in light of the smaller crop and continually rising processing costs. However, there will be adequate supplies for the holiday season.

Grapes

The final forecast of U.S. grape production at 4.25 million tons, was 24 percent smaller than the record 1980 crop. Prospects in California point to a crop of 3.81 million tons, 26 percent below 1980 with moderately to sharply smaller crops expected for all three varieties.

Reflecting a sharply smaller crop in New York, total grape production from states other than California is estimated at 435,000 tons, down almost 8 percent from 1980. New York, the second largest grape producing State in the Nation, expects a crop of 140,000 tons, off 20 percent from last year's output. Production in Washington, the third largest State, at 145,000 tons, is down fractionally from 1980, while Michigan's crop, 50,000 tons, is up 1 percent. Together, production from these States accounts for 10 percent of the total crop, compared with 8 percent a year ago.

Even with a smaller crop, shipments of fresh table grapes were running moderately above last year's pace. In response to good demand and declining supplies, f.o.b. prices have strengthened to levels sharply above a year ago. As of October 10, f.o.b. prices for Thompson Seedless were quoted at \$20.50 per 23-pound lug in the Kern District, California, compared with \$8.00 a year ago. Prices for table grapes will remain higher throughout the season because the remaining supplies are well below year-earlier levels. The field price for raisins in California has also been settled between growers and dryers at levels moderately higher than a year ago. The BLS September wholesale price index for all wines stood at 236.8 (1967=100), up 9.3 a year ago. Prices are expected to rise further, reflecting higher prices of raw materials and increased costs of crushing.

Pears

The final forecast of the 1981 U.S. pear crop is 856,000 tons, 4 percent smaller than a year earlier, but still fractionally more than 1979 production. The smaller deliveries of Bartletts to processors in California have resulted in shipments of fresh Bartletts through mid-October moderately above a year ago. Consequently, larger shipments have pushed fresh pear prices at shipping points moderately lower than a year earlier. California growers and canners have agreed on a field price of \$165 a ton for No. 1 grade Bartletts, compared with \$172.50 last year. The Washington-Oregon Canning Pear Association reported the canning price for No. 1 Bartletts, 2 1/2 inches and larger, at \$150 per ton, compared with \$175 in 1980. These lower prices are primarily attributed to larger inventories of canned pears. With cold storage stocks of winter pears sharply above a year ago, prices for fresh winter pears are not expected to rise appreciably this winter. However, the smaller apple crop may help boost pear prices somewhat.

Processed Noncitrus

With a substantially smaller noncitrus crop, the 1981/82 pack of most noncitrus fruit will be less than that of a year ago. However, larger carryovers for most canned fruit will make adequate supplies for this season even though the total pack will be smaller than last season. The total supplies of raisins and prunes are likely to be slightly larger because of sharply larger stocks on hand. Frozen fruit and berry supplies are expected to be down because deliveries of berries to processors have been significantly less than last year. In addition, the total pack of tart cherries and imports of frozen strawberries from Mexico are also substantially reduced from last year. Prices should stay firm because of higher prices of raw materials and increased processing and marketing costs. However, the sluggish economy may moderate price increases.

Although the packing season is not over, the 1981/82 pack of most canned fruit is expected to be smaller than last season. The unaudited pack data indicate decreased packs of canned clingstone peaches, fruit cocktail and mixed fruits. The pack of canned Freestone peaches is only half of last year's quantity. Also, deliveries of California Bartletts for canning use are likely to be 193,731 tons, off 18 percent from 1980. The decreased utilization of tart cherries for canning in Michigan and a sharply smaller pack of canned cherries in the Northwest will result in tight supplies this season. Carryover of canned apple products were below a year ago. Thus, combined with small apple crops in the Eastern and Central States will result in supplies of canned apple items will be smaller.

In light of higher costs of raw materials and processing, prices of canned fruit at all levels will remain higher this season. The BLS September wholesale price index for canned fruit, 244.5 (1967=100), was almost 5 percent greater than a year ago. However, the economic slowdown could moderate price increases. Occasional promotional reductions will probably be offered if the movement slackens.

Smaller noncitrus fruit crops will also cause a reduced pack of dried fruit. Early season trade estimates indicate that California may produce 215,000 tons of raisins, off sharply from 1980. However, with a sharply larger carryover, the total supply of raisins during 1981/82 will be slightly larger than 1980/81. Even with larger supplies, raisin prices are still expected to advance in response to higher prices for raw products and rising costs of marketing and processing. The BLS September wholesale price index for raisins was 459.1 (1967=100), 3 percent above a year ago.

Production of dried prunes, the other major dried-fruit item, is currently estimated at 155,000 tons (natural condition), down 8 percent from 1980. However, with a larger carryover, the total supply of dried prunes for 1981/82 is likely to be 3 percent more than last year. Prices may hold relatively firm, even with a slightly larger supply. The September BLS wholesale price index for dried prunes stood at 270.1 (1967=100), slightly above a year earlier.

The 1981 pack of frozen fruit and berries is not likely to exceed the large pack of 653 million pounds in 1980. Deliveries of berries to freezers on the Pacific Coast have dropped substantially from last year. Freezers in California, the leading State, have received 119.6 million pounds of strawberries through October 10, down 12 percent from a year earlier. At the same time, U.S. imports of frozen strawberries from Mexico totaled 56 million pounds, compared with 74 million a year ago. Freezer's receipts of both blackberries and blueberries from Oregon and Washington have also been considerably less than last year.

Reduction in the total pack of frozen tart cherries is also reported; approximately 88 million pounds of tart cherries were used for freezing, compared with 135 million in 1980. Even though the 23.6 million pounds held in reserve will be released, the available supply of frozen tart cherries will still be smaller than that of 1980. The smaller crop of apples and peaches are likely to result in reduced frozen packs.

Reflecting sharply reduced stocks of frozen strawberries, cold storage holdings of frozen fruit and berries on September 30 totaled 553.4 million pounds, off 12 percent from last year. Supplies of frozen strawberries were 167 million pounds, a decrease of 21 percent, reflecting smaller pack and imports. There were also significantly less tart cherries in cold storages because of a smaller pack. With smaller supplies and higher prices of raw materials, wholesale prices for most frozen fruits and berries will remain firm throughout the season.

Tree Nuts

Supplies of tree nuts will be plentiful during 1981/82. Both almond and walnut production are expected to be record large, and the pecan crop will be 79 percent higher than last year's drought-sticken crop. The filbert crop is likely to be only slightly below last year's production. Prices for almonds are expected to average below last year because demand for U.S. almonds will be weak resulting from the larger world production. But establishment of a 25 percent reserve by the Secretary of Agriculture under authority of the

marketing order may moderate any price decline. Even though demand for walnuts so far has been good, the record crop and larger supplies of competing nuts are likely to weaken grower prices. Carryover stocks of pecans at the beginning of the season were sharply smaller than a year ago. However, the total supply of pecans will still be heavy this season. Consequently, larger supplies combined with record crops of almond and walnuts should keep grower prices below last year's high level. Boosted by sharply larger crops in Turkey, filbert production in 4 major producing countries, including the United States, will be 14 percent above 1980. Filbert prices received by growers are expected to average below 1980.

Per Capita Fruit Consumption

Total per capita fruit consumption in 1980 is currently estimated at 227.8 pounds (fresh weight equivalent). This was 6.3 pounds or nearly 3 percent above 1979. The increase is shared by both citrus and noncitrus fruits.

Per capita consumption of all fresh fruit rose from 83.3 to 87.3 pounds between 1979 and 1980, entirely because of larger citrus consumption. Per capita fresh citrus consumption showed a gain of 17 percent because consumption rose for all fresh citrus except lemons, which remained unchanged. Lower prices contributed to the sharp increase in orange consumption--from 12.4 pounds in 1979 to 15.7 pounds in 1980. Oranges accounted for 55 percent of total fresh citrus consumption.

Per capita consumption of fresh noncitrus fruit, estimated at 58.6 pounds, was down slightly from 1979, because consumers ate less apples and bananas. Consumption of bananas, the leading fresh fruit, fell from 21.4 pounds in 1979 to 20.8 pounds in 1980. Apple consumption declined from 17 to 16.7 pounds per person during the same period.

Per capita consumption of processed fruit (fresh weight equivalent) showed a slight gain from 138.2 pounds in 1979 to 140.5 pounds in 1980, with increases recorded for both citrus and noncitrus. Citrus consumption rose from 89.4 pounds per person in 1979 to 91.2 pounds in 1980, primarily reflecting larger canned and chilled juices. Consumption of FCOJ was near last year's level, while the amount of canned citrus fruit declined 14 percent.

Reflecting good gains in dried fruit, particularly raisins, per capita consumption of processed noncitrus fruit rose to 49.3 pounds in 1980 from 48.8 pounds a year earlier. Consumption of frozen fruit was also up considerably, while both canned fruit and juice--mainly apple juice--fell.

Total per capita fruit consumption (fresh and processed) in 1981 is expected to be slightly less than 227.8 pounds consumed in 1980. Decreases are expected for fresh, canned, chilled, and dried fruit. Per capita consumption of frozen items is likely to increase slightly.

Table 5.--Per capita consumption for total, fresh, frozen, canned and chilled, and dried fruit, 1977, 1978, 1979, 1980 and estimates for 1981

Year	Total	Fresh	Frozen	Canned and chilled	Dried
Pounds, per capita, fresh weight equivalent					
1977	222.5	82.0	72.3	58.2	10.0
1978	214.9	81.5	62.5	62.5	8.4
1979	221.5	83.3	65.7	61.9	10.6
1980	227.8	87.3	66.2	62.6	11.7
1981 <u>1</u> /.....	224.1	84.7	66.5	61.6	11.3

1/ Estimated.

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For Release:

General Price Prospects

Smaller Vegetable Supplies Point to Higher Prices

Smaller supplies of both fresh and processed vegetables this fall point to higher prices for producers and consumers. Supplies of fresh vegetables during the fourth quarter of 1981 are approximately 6 percent smaller than last year, and processors have used about 2 percent less. Prices paid to growers for fresh market vegetables will advance seasonally this fall and average moderately higher than a year ago. During the last quarter of 1981 and the first half of 1982, retail prices for most processed vegetables will average moderately higher than a year earlier, reflecting tighter supplies and higher processing and marketing costs.

The index of grower prices for fresh and processed vegetables during the first half of the year averaged about 10 percent higher than a year ago. Higher prices during the first half of 1981 reflected periods of short supplies of winter and spring vegetables resulting from smaller acreages, a January freeze in Florida and reduced imports from Mexico. However, prices declined in July and August as supplies returned to normal levels, and in September the index of farm prices for vegetables stood at 118 (1967=100) down 3.3 percent from August and only 2.6 percent above a year ago. Lower prices for onions, carrots, and tomatoes contributed most to the price decrease. Higher prices for watermelons, cucumbers, and sweet corn were partially offsetting. Prices will increase during the last quarter of 1981 and the first quarter of 1982 as harvests are completed in the Northern States and vegetable production returns to the warmer climates.

Wholesale prices for canned vegetables continued an upward trend throughout the 1980/81 marketing season. Prices jumped in April when smaller stocks and prospects for smaller packs became apparent. In October, wholesale prices for the 10 leading canned vegetables averaged 21 percent higher than a year ago. Prices will escalate further during the 1981/82 season, but increases will be more moderate.

Reflecting smaller supplies and higher processing and marketing costs, retail prices for processed vegetables in August were 14.2 percent higher than a year ago. Frozen vegetable prices were 12.8 percent higher while prices for major canned vegetables were up an average of 15.1 percent. Despite current high prices for processed vegetables, production of processing vegetables is expected to decline again this year. Thus, prices for major processed vegetables are expected to average higher during 1981/82 than during the 1980/81 season.

Fresh Vegetables

The acreage planted to 14 fresh market vegetables since July 1 in major producing States is estimated at 218,850 acres (88,600 hectares), 5 percent less than on October 1, 1980. Broccoli, which increased 5 percent, and cabbage, which is unchanged from last year, were the only crops not showing declines. Among the major crops, lettuce will have a 4 percent decline in acreage and tomatoes are predicted to have a 20 percent decline in planted acreage.

Production of the 14 principal vegetables is expected to dip to 35.1 million cwt., down from 39.0 million cwt. a year ago. Only broccoli is projected to have increased production. It will be up 9 percent from a year ago. All of the remaining vegetables show decreases of from 1 to 30 percent.

Higher Prices in 1981/82

Fresh market vegetable prices to growers will rise seasonally during the fourth quarter and average moderately higher than a year ago. The index of prices received for fresh market vegetables stood at 122 (1977=100) in the third quarter of 1981, compared with 105 a year ago. If both Florida and Mexico have good weather during the first quarter of 1982, prices should remain below the 1981 index of 161 but still be above current levels.

Prospects for Leading Items

Onions

The final forecast for late crop storage onion production is estimated at 19.3 million cwt. (87,599 metric tons) an increase of 5 percent from the 1980 production. Harvested area is estimated at 53,170 acres, up 5 percent from 1980 and 1 percent greater than in 1979. Average yields are down 1 cwt. per acre below last year. In Idaho and Eastern Oregon, the leading producing area, production is down 6 percent and New York, the second leading producer, shows an 11 percent decrease. Most of the other areas remained about the same or showed slight increases.

Quarterly index of farm prices for fresh vegetables 1/

Year	1st	2nd	3rd	4th	Annual
(1967=100)					
1974	68	64	62	67	65
1973	81	98	74	64	79
1974	73	83	73	81	77
1975	85	93	83	90	88
1976	93	80	86	92	88
1977	128	93	84	96	100
1978	107	129	94	94	106
1979	134	105	95	101	109
1980	100	116	105	119	110
1981	161	128	122		

1/ Excludes potatoes
Source: Ag. Prices, SRS, USDA.

Quarterly retail prices for fresh vegetables 1/

Year	1st	2nd	3rd	4th	Annual
(1967=100)					
1972	137	134	128	133	133
1973	151	167	151	137	152
1974	150	160	152	151	153
1975	168	169	165	160	166
1976	170	168	165	179	170
1977	221	216	178	184	200
1978	212	247	209	204	218
1979	254	224	211	226	229
1980	220	250	231	253	239
1981	287	275			

1/ Excludes potatoes.
USDA estimates derived from Consumer Price Index.

Even with larger supplies, prices for 2 inch and larger yellow onions averaged \$5.58 per 50 pound sack, f.o.b. Orange County, New York, shipping points in early October. This compares with \$4.05 a year earlier. Yellow Spanish types, 3 inches and larger, f.o.b. Idaho and Oregon averaged \$4.75 per 50 pound sack, down from \$5.67 per sack in 1980. Prices for 3 inches and larger yellow hybrid Colorado onions, at \$6.25 per sack were sharply lower than the \$7.30 a year ago.

Sweet Corn

Most of the sweet corn during the fall quarter comes from the Florida Everglades, where 12,800 acres have been planted since July 1. An additional 1,100 acres have been planted since July 1 in California for harvest during October to December. Florida's acreage is down 10 percent from a year earlier and California's is up 16 percent. The total is down 9 percent from 1980. Based on average yields, this year's fall crop of sweet corn is expected to total 908,000 cwt., down 11 percent from a year ago. With a smaller Florida crop, consumers in the East will find less sweet corn and higher prices in stores this fall. Western consumers will find ample supplies and perhaps slightly lower prices.

Lettuce

With both California and Arizona indicating reductions in acreage planted to lettuce after October 1, the total is placed at 68,200 acres, (27,600 hectares), 4 percent less than the October 1980 planted acres. With average yields, this year's fall crop is estimated at 14.8 million cwt., about 5 percent less than a year ago.

Lettuce prices are extremely volatile and may vary widely from day to day, depending on supplies, quality, weather, labor availability, and transportation. After two years of generally low prices, lettuce growers reduced acreage this summer and prices have been higher through the late summer and early fall. In early October, cartons of iceberg-type lettuce were priced at \$4.20 per carton, f.o.b. Santa Maria, California, compared with \$3.15 a year ago. Two weeks earlier, on September 19, Santa Maria lettuce was priced at \$6.13 a carton, compared with \$3.90 in September, 1980. With the moderately smaller crop in prospect, prices will remain fairly strong throughout this marketing season. Retail prices will probably be in the 59 cents to 79 cents a head range rather than the 29 cents to 49 cents range of the past year or so.

Tomatoes

U.S. tomato acreage planted on October 1 is estimated at 10,900 acres (4,410 hectares), down 20 percent from October, 1980. Florida acreage is placed at 10,300 acres, down 18 percent, and Texas' tomato area is placed at 600 acres, down 40 percent from a year ago. With average yields, this acreage will produce about 2.7 million cwt., 25 percent less than in 1980.

Prices for all tomatoes will rise seasonally through November and December. With a sharply smaller crop, prices will stay well above last year's levels. However, in early October, 2-layer flats of pink tomatoes (4 X 5 and 5 X 6's) were priced at \$4.28 per flat, compared with \$7.00 a year ago. These prices are expected to rise sharply after the local eastern and midwest production is off the market.

Other Fresh Vegetables

The estimated October 1 acreage of green beans is placed at 22,400 acres (9,070 hectares), 7 percent less than in 1980. With average yields the crop will total about 673,000 cwt., 3 percent less than a year ago. Most of this production will come from Florida, with smaller quantities from Georgia, New Jersey, North Carolina, South Carolina, and California. Planted acreage of eggplant in Florida for harvest after October 1 is placed at 850 acres (340 hectares), down 23 percent from a year ago. With normal yields, the crop will total 167,000 cwt., 22 percent less than in 1980. Acreage of escarole/endive, at 2,050 acres, is 13 percent less than in 1980. The crop, at 219,000 cwt., will be down 2 percent. Spinach acreage for harvest after October 1 was estimated at 2,800 acres (1,130 hectares), 22 percent below a year ago. With average yields the crop will total 172,000 cwt., 30 percent less than in 1980.

Processed Vegetables

The area contracted for production of seven major processing vegetables in 1981 is estimated at 1.2 million acres (500,720 hectares), down 2 percent from 1980. Raw tonnage production under contract is expected to approximate 9.4 million tons (8.5 million metric tons) about 4 percent less than was contracted a year ago. Production declines are expected for green snap beans, beets, green peas, winter and spring spinach, and tomatoes. Increases are expected for green lima beans and sweet corn. Highlighting this season are substantial decreases in contracted tonnage of snap beans, down 16 percent; beets, down 23 percent; green peas, down 6 percent; and tomatoes, down 10 percent. Contracted acreage of cabbage for kraut, cucumbers for pickles, and fall spinach will be reported later.

The carryover of leading canned vegetables at the beginning of the pack year was down about 12 percent from a year ago. Stocks of the seven leading frozen vegetables were down more than two-fifths at the beginning of the pack year and on October 1, stocks of all frozen vegetables totaled 1.66 billion pounds, down 4 percent from 1980. The data on contracted acreage are not categorized for canning or freezing, but the current stocks positions indicate both outlets will share in the small over-all decreases. Most of the decrease in canned tonnage will come from canned tomatoes, beets, and green peas. Although carryover stocks of canned tomatoes from the 1981 pack are not large, contracted acreage of processing tomatoes was down this year and the crop was reduced by poor growing conditions in California. With the packs of canned vegetables about the same as a year ago and frozen packs

expected to be only about 1 percent larger, total supplies of canned and frozen vegetables during the 1981/82 marketing season are expected to be moderately smaller than the previous year. Canned supplies will be down about 2 percent and frozen vegetables down 8 percent. Smaller supplies, combined with higher processing and marketing costs, will spur higher wholesale prices for both canned and frozen vegetables for the remainder of 1981 and through the first half of 1982.

Higher raw product costs and increased processing and marketing costs will boost both the wholesale and retail prices. Some of these costs have risen substantially during the past year. For example, the index of packaging materials costs was 285.8 (1967=100) in August 1981, up 7.5 percent from August, 1980. During a comparable period, the index of prices for fuel and power rose 19.9 percent to 685.8 (1967=100). Labor costs are up 11.0 percent in 1981 and the monthly index of transportation costs in August stood at 351.5 (1967=100), 18.7 percent above a year ago.

Most of the decrease in processing vegetable tonnage comes from California tomatoes, which do not compete directly with other fresh and processed vegetables. However, there are smaller crops of nearly all of the other processing vegetables, which are often substituted for each other depending on relative prices. For example, the relatively large supplies of green beans this year will tend to dampen price rises for corn or peas.

The total supply (pack plus carryover) of canned vegetables for 1981/82 will be only slightly smaller than last season's small supplies. This slight drop results from a 12 percent smaller carryover of the major canned items, since the total packs averaged about the same as in 1980.

Reflecting continued inflationary pressures, wholesale prices of canned vegetables continued an upward trend throughout the 1980/81 marketing season. Prices for canned vegetables remained fairly steady about 219 (1967=100) from December through March, but jumped when the smaller stocks position became apparent. In October, the index of prices for 10 leading vegetables stood at 240.7 (1967=100) up 21 percent from a year earlier. With smaller supplies, wholesale prices (particularly for canned tomatoes and tomato products) will probably edge higher through the remainder of this year and the first quarter of 1982. With supplies of the 7 major frozen vegetables down about 8 percent from a year ago, prices for most of these items will also be higher.

Prospects for Leading Items

Peas

The volume of peas available for canning and freezing this year is estimated at 451,360 tons, and the combined pack of canned and frozen peas is substantially smaller than a year ago. This marks the third year in a row that both canned and frozen packs have been reduced. Total supplies of processed green peas will be tight throughout the marketing season and prices

will be advanced in the first half of 1982. Total supplies of canned green peas are estimated at 30-35 million cases (24-303 equivalent), barely above the annual volume consumed. Despite the expected smaller supplies, prices for canned green peas have been steady.

The 1981 pack of frozen green peas is estimated at slightly less than 300 million pounds, also the smallest pack in the past 3 years. Stocks on hand on September 1 totaled 336.0 million pounds, down 6 percent from a year ago. Despite the smaller pack and smaller supplies prices were firm through September. Prices are expected to rise this winter, reflecting both the shorter supplies and higher marketing costs.

Lima Beans

Green lima bean tonnage contracted for canning and freezing is estimated at 67,750, 13 percent more than a year ago. Contracted tonnage is up in California and Delaware, but lower in Maryland, Wisconsin and other States.

Most of the lima bean tonnage in California will be frozen. Carryover stocks of both fordhook and baby lima beans were sharply lower this year after 2 years of ample supplies. This smaller carryover combined with a smaller pack will yield total supplies only slightly larger than our annual consumption. Total supplies will be near 123 million pounds, about 11 percent smaller than a year ago. These tight supplies--particularly of the baby lima beans--will boost prices above year-earlier levels during the coming months.

The carryover of canned lima beans on August 1 was nearly 700,000 cases, up more than a sixth from the previous year. With both yields and acreage up this year, the total pack will be up moderately as will total supplies. Ample supplies will moderate any price increases caused by increased processing and marketing costs and prices probably will remain at current levels throughout the 1981/82 marketing season.

Snap Beans

The estimated 1981 contracted tonnage for canning and freezing, at 643,750 tons, is 1 percent smaller than a year earlier. The carryover of canned green beans, at 15.9 million cases (24-303's), however, is largest in the past several years. The 1981 pack is expected to total about 60 million cases, bringing the total 1981/82 supply to about 76 million cases, the largest in years. With large supplies, wholesale prices for green beans are showing some weakness, and will probably average about the same as a year ago throughout the fall and winter marketing season.

Stocks of frozen green beans totaled nearly 211 million pounds on September 1, substantially less than a year ago. With total supplies of green beans expected to be down substantially from the large supplies of past two years, prices will probably rise during the 1981/82 marketing season. During September, prices for regular and french cut green beans averaged \$7.50 per case of 24-9 oz. cartons, compared with \$6.70-\$6.80 a year ago. Institutional packs were priced at 47 cents per pound, f.o.b. West Coast, compared with 42 cents a pound a year ago.

Sweet Corn

The 1981 output of sweet corn contracted for processing is estimated at 2.4 million tons (2.18 million metric tons) 12 percent larger than the 1980 output produced under contract. All of the processing States except Idaho, Pennsylvania, and "Other" States reported increases in production. Increases in Washington and Oregon--the principal freezing States--were 28 and 16 percent, respectively.

With a very small carryover of canned corn but a fairly good pack, total supplies during 1981/82 will be about 2 percent larger than last year but 12 percent smaller than the 1979/80 season. Larger supplies usually mean lower prices, but increased processing and marketing costs will probably keep prices near last year's levels and well above 1979/80 prices. These prices should maintain total disappearance at the usual 55 million case (24/303's) level and next summer's carryout should be in the 5 to 7 million case range. Contracted acreage in 1982 will probably remain near the levels recorded this year.

Tomatoes

Processing tomato production under contract in 1981 is estimated at 5.65 million tons (5.13 million metric tons), down 8 percent from the 1980 contracted production. Acreage for harvest is estimated at 245,390 (99,300 hectares) 5 percent below a year ago. Yields per acre, at 23.04 tons, are down 2 percent from a year ago. This forecast is based on an October 1 survey in California and a September 1 survey in other States.

California's processing tomato crop got off to a fast start with good stands and set. However, extremely hot weather in late June damaged the crop in the Sacramento and northern San Joaquin Valleys. Poor vine condition, varying ripening times and small fruit reduced yields severely in some districts. Some Central California fields showed yields below 10 tons per acre but most were much better. Deliveries in August were far below any recent year. Harvest continued through mid-October.

Deliveries to canners through September 26 were estimated at 4.35 million tons, down from 5.1 million tons a year ago. The trade is now looking for a final tonnage of 4.8 million tons and the USDA is forecasting 4.9 million tons, down 11 percent from the 1980 total.

Light deliveries combined with a relatively light carryover from the 1980 crop, portend tight supplies and higher prices for canned tomato and tomato products this marketing season. A number of tomato canners raised prices, effective September 21, as much as 25 to 30 percent. Wholesale prices for California Standard Grade peeled tomatoes were raised to \$11.80 per case (6/10's), up from \$9.25 a year ago and \$7.50 in August, 1979.

This second year of smaller production will be beneficial to the entire California tomato industry. After several years of distress prices, the Tomato Growers' Association was able to negotiate a price of \$50 a ton, cash, and \$53 a ton, deferred payment, for this year's crop. With a prospect of low carryover stocks again next spring and strong processor demand, tomato growers are looking forward to a stronger bargaining position than they have had in recent years.

VEGETABLE CONSUMPTION

Fresh Vegetable and Melon Use Up in 1980

Per capita use of fresh vegetables and melons increased in 1980 to 129.6 pounds, up from 126.6 (revised) a year earlier. Fresh vegetable consumption to 111 pounds for person--up from 105.9 in 1979--but melon consumption dropped to 18.6 pounds, down from 20.7 pounds the year before. Larger production of fresh market vegetables in 1980 and a decline in melon output brought on the changes.

Excluding potatoes, the most popular fresh vegetables in 1980 continued to be lettuce, at 27.4 pounds per person, and tomatoes and onions, both at 13.4 pounds. All three vegetables registered gains in consumption over the year before.

Processed Vegetable Consumption Down

The consumption of both canned and frozen vegetables decreased in 1980 because of lower supplies and somewhat higher prices. Use of canned vegetables fell to 52.7 pounds per person in 1980, down from 54.6 pounds (revised) the year before. Consumption of tomatoes and tomato products--the most important canned vegetable--dropped to 22.2 from 23.5 pounds per person because of the smaller 1980 pack and higher prices. Per capita consumption of canned whole tomatoes rose to 6 pounds, but tomato products dropped to 12.1 pounds, down from 14.1 pounds a year earlier.

Per capita consumption of frozen vegetables also slipped in 1980, interrupting a long-time trend of annual increases. Use of frozen vegetables declined to 27.4 pounds per person, down from 29.6 pounds in 1979 and 28.4 pounds in 1978. Data on frozen vegetables include frozen potato products. Consumption of frozen potato products also fell to 16.9 pounds per person, down from 17.7 pounds in 1979 and 17.2 pounds in 1978. However, frozen potato products still accounted for 62 percent of the total frozen products consumed. Frozen corn, the second most important frozen vegetable, trailed far behind at approximately 2 pounds per person--about 7 percent of the total.

1981 Potato Prospects

The 1981 fall crop is estimated at 287.1 million cwt., 8 percent larger than in 1980 but 3 percent smaller than in 1979. The area for harvest is estimated at 1.04 million acres, 6 percent more than a year ago but 3 percent less than in 1979. Yields in 1981 are expected to average 275 cwt. per acre, but these estimates are tentative. In the Pacific Northwest, where yields are usually the highest, industry sources are saying fields are spotty and yields may average 50 cwt. lower than a year ago.

In the seven Eastern fall States, production is forecast at 45.9 million cwt., up 9 percent from a year earlier. Yields, at 258 cwt. per acre are 22 cwt. higher than in 1980, but the area for harvest is down slightly. As a group, the seven States had the smallest acreage on record, but in Maine and New York acreage was about the same as a year ago. In the eight Central States production is estimated at 63.2 million cwt., up 16 percent from 1980 but up only 1 percent from 1979. The estimated yield of 215 cwt. is up 11 percent from last year, while harvested acreage is up 3 percent. Production in the Western States, at 178 million cwt., is 5 percent above 1980 but 4 percent below 1979. The average yield of 311 cwt. is 5 percent smaller than last year, but acreage for harvest, at 572.7 acres, was 10 percent larger than in 1980.

Price Prospects

With the total fall crop up 8 percent from last year, grower prices will decline from last year's record highs and will probably average in the range of \$4.75 to \$5.25 per cwt., down from the U.S. average of \$6.55 for the 1980 fall crop. Prices will be buoyed somewhat by the generally good quality reported in all areas. In addition, processor demand will be very strong. On October 1, stocks of frozen french fries totaled 446.1 million pounds, down 15 percent from a year ago. Stocks of dehydrated potatoes are also reported to be below normal. Thus with strong demand in both the fresh and processing markets, this will be another good year for potato growers even though prices are down from last year's record highs.

Per Capita Use Down

Consumption of potatoes in 1980 averaged 116.2 pounds per person as the use of fresh potatoes rebounded to 54.2 pounds and the use of processed declined to 62.0 pounds. In 1980, per capita use of dehydrated potatoes dropped again to 9.3 pounds. Consumption of frozen potatoes dipped to 33.8 pounds per person, down from 35.4 pounds (revised) a year earlier. Consumption of chips and shoestrings also eased down to 16.8 pounds per person, but the use of canned potatoes remained at about 2.1 pounds per person.

Sweetpotatoes

1981 Prospects

The 1981 sweetpotato crop is forecast at 12.5 million cwt., up 14 percent from 1980's small crop, but down 7 percent from 1979's large output. Harvested acreage is expected to total 108,800 acres, up 6 percent from 1980 but 4 percent smaller than in 1979. Estimated yield, at 115 cwt. per acre is up 7 percent from 1980 but down 2 percent from 1979.

With canners' carryover stocks of canned sweetpotatoes virtually nonexistent, there will be strong demand for sweetpotatoes for processing. So far, grower prices in the processing market have been higher than a year ago. Canned stocks totaled 3.6 million cases, (24/303's) on April 1, 1981,

down 64 percent from a year earlier. Because of the small supplies and only a moderately larger crop, canners have been paying North Carolina growers \$4.75 per 100 pounds delivered, up slightly from last year when the crop was small but stocks were large.

Prices Lower

Grower prices for fresh market sweetpotatoes remained high through July but edged downward in August when early sweetpotatoes came on the market. In mid-October, quotations for 50-pound cartons of U.S. No. 1 Porto Rico sweetpotatoes, f.o.b. Louisiana shipping points averaged \$10.00 per carton compared with \$8.50 a year earlier. Prices usually advance seasonally, but coming off of this summer's highs, prices will probably remain at current levels or slightly below through much of the marketing season.

Mushrooms

Production Up

Domestic mushroom production reached a new high of nearly 471 million pounds (213,441 metric tons) during the 1980/81 marketing season. This was fractionally higher than in 1979/80 and 4 percent more than production in 1978/79. This continued the upward trend since mushroom estimates were begun in 1966. Pennsylvania, the leading State, with 50 percent of the 1980/81 crop, produced 237 million pounds, 11 percent more than the previous season. Eastern States accounted for 62 percent of the total U.S. production; Central States, 13 percent; and Western States, 25 percent. The U.S. average yield of 3.35 pounds per square foot was up 7 percent from the record yields a year earlier. These higher yields are the result of new production technologies and increased efficiencies that have been introduced into the industry in recent years.

Fresh market sales of mushrooms, at 267 million pounds, were up 4 percent from the 1979/80 season, and accounted for 57 percent of the total U.S. production. The average price received by growers for fresh market mushrooms averaged 91.8 cents a pound, a decrease of 4 cents from the previous season.

While fresh market sales continued the long-term upward trend, processor usage dropped to 203 million pounds, 5 percent less than the previous season, and processings' share of the market dropped to 43 percent. The average price to growers for processing mushrooms dropped to 51.8 cents a pound, a decline of nearly 6 cents a pound from a year earlier.

Per Capita Consumption

Per capita use of all mushrooms declined slightly to 2.8 pounds in 1980/81 (raw equivalent basis) down from 2.9 pounds a year earlier, the first break in the upward trend since these computations were begun in 1966. Of the total consumption, an estimated 1.0 pounds were fresh and 1.8 pounds were processed. Of the processed mushrooms, about 45 percent were imported.

Prospects for the mushroom industry during the 1981/82 marketing year point to continued higher tariffs, lower imports, and higher prices for processed mushrooms. Prices for fresh mushrooms will be about the same as in 1980/81. With a generally sluggish economy and mushrooms classified as a gourmet item, some further decline in per capita consumption can be expected during the 1981/82 season.

Dry Edible Beans

Dry edible bean production in 1981 is estimated at a record 31.0 million cwt. (1.4 million metric tons), 19 percent more than last year's record crop. The estimated acreage for harvest is 2.17 million acres, 18 percent above a year ago. The average yield this year is estimated at 1,426 pounds per acre, 4 pounds larger than in 1980.

Harvest began about mid-August in California, Idaho, and Washington. by the first of September harvest had begun in other States but was running somewhat later than normal.

Average prices received by growers increased each month during 1981 and reached their peak in June at \$36.80 per cwt., compared with \$23.60 a year earlier. The industry reflected the forthcoming record crop by dropping prices to \$35.40 in July and to \$26.70 in August. Grower prices rose again in October after the excessive rains in Michigan and are expected to remain in the \$30 to \$35 range this fall because prices also will be buoyed by deliveries of sales made from the 1981 crop.

Exports Up

Exports of dry edible beans for the September 1980-August 1981 period were 744,539 metric tons, 45 percent above a year earlier. Of the white classes, exports of Navy beans increased 22 percent, and Great Northerns increased 18 percent. Pinto exports (largely to Mexico) and Red Kidney exports were more than double a year earlier.

Summary

Because most vegetables are readily inter-changeable with one another at both the production and consumption ends of the marketing spectrum, forecasting supplies and prices of individual items is difficult, if not impossible. We are assured, however, that we will have smaller supplies of processed vegetables during the fall and winter of the 1981/82 marketing season. These smaller supplies, plus higher processing and marketing costs, will result in higher prices for both canned and frozen vegetables. Because of higher prices in 1981, larger plantings and increased supplies are indicated for most major vegetables during the spring and summer of 1982. Melon production will remain high next year and keep pace with population growth. Although farm prices for potatoes will be lower this year than last, it will still be a good year for potato growers. Lower prices at retail may also increase potato consumption to new, higher levels. The production of dry edible beans, peas, and lentils is strongly influenced by prospects for exports. The strong export markets of the past 2 years may weaken in 1982. However, the trend for exports of these items is up, so any reduction in production of these commodities will be of a temporary nature.

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Introduction

The year after they marry, Robert and Cynthia Warner discover that Washington has penalized them for tying the knot: they must pay several hundred dollars more in income taxes than if they lived together outside of marriage. Couples with higher incomes have lost several thousand dollars to this "marriage tax." Altogether, nineteen million American families lose money because of this provision. The recently enacted tax reform bill will reduce but not eliminate this marriage penalty.

The Jacksons enroll their daughter in Head Start. The shy child blooms in this preschool program. And the Jacksons feel enriched by their own involvement as classroom volunteers and as members of the advisory board. By age six, their daughter has the basic skills for success in first grade. Ten years later she is staying on target, in the correct grade for her age, unlike other poor children who did not attend Head Start.

Joan McKenzie's mother requires continual care after being discharged from the hospital. Joan would prefer to hire a nurse's aide and care for her at home, especially since the doctor believes this would contribute to a rapid recovery. But for financial reasons, she reluctantly decides to put her in a nursing home: Medicare will pay for 100 days of post-hospital care in an institution but not one cent if her mother is cared for at home.

There is nothing unique about these examples: they occur in real life; they take place in every state; they are not limited to families of particular races, classes or creeds. All of them are the direct result of government policies that are insensitive to their needs or aspirations. Others reveal how policies with a family focus support and strengthen the families they serve. Together, they suggest the haphazard ways many government programs affect families.

Senate Hearings

There is a growing interest among the public and among public policymakers in examining how policies affect families. An early focal point for this interest was a series of Congressional hearings, chaired by then-Senator Walter F. Mondale and ranking minority member, Senator Robert Stafford in 1973, on "American Families: Trends and Pressures." It was my privilege to serve as staff director to that

subcommittee and to arrange those family hearings. Witnesses testifying at those hearings included scholars, policymakers, religious leaders and family members themselves. Margaret Meade seemed to speak for all the witnesses when she testified that we should have "family impact statements" -- something like environmental impact statements -- to assess and anticipate how public policies affect families.

Seven years later, the White House Conference on Families (WHCF) and the Gallup poll it commissioned revealed that a large segment of the American public was concerned about the effects on family life of a wide range of public and private policies. And at the three

regional WHCF conferences, out of over 150 recommendations considered, resolutions recommending family impact analysis received the third highest number of votes. These family impact recommendations were adopted by a margin of 9 to 1.

Family Impact Seminar

The Family Impact Seminar (FIS) was founded in 1976, as a follow-up to the 1973 Senate hearings. The Subcommittee was very interested in the family impact recommendations, but felt that this new idea needed to be examined and tested. FIS was created to explore this concept, and I left my position in the Senate to direct it. Our goal is to test the feasibility of assessing how public policies affect families, and to do so in an independent, non-partisan setting.

The members of the Family Impact Seminar are twenty-four of the country's leading scholars and policymakers concerned with families, including: Nancy Amidei, Mary Jo Bane, Terrel Bell, Urie Bronfenbrenner, Wilbur Cohen, Beverly Crabtree, Robert Hill, Nicholas Hobbs, Jerome Kagan, Martha Phillips, Chester Pierce, and Carol Stack. Also, over 200 diverse organizations are affiliated with FIS as cooperating members. They believe that we are probing a critical area of American life and want to advise our work, on our reports, and help us to improve them. Their guidance has been invaluable. These include: American Academy of Pediatrics, American Council of Life Insurance, AFL-CIO, Children's Defense Fund, Common Cause, Family Service Association of America, Association of Junior Leagues, NAACP, National Council of Jewish Women, National Council on the Aging, National Council of Churches, National Council of La Raza, National Governors Association, National PTA, and the U.S. Catholic Conference.

One of the first questions FIS explored was how many policies of the federal government affect families. We reviewed the Catalog of Federal Domestic Assistance and found 268 programs -- administered by 17 different departments and agencies -- which have potential direct impact on American families.

Policies at the state level often have an even more direct impact. It is state courts and legislatures that make and interpret the laws affecting the most private and intimate areas of family life: marriage, divorce and custody; child neglect and foster care; and the system of juvenile justice -- are some examples. Also state governments often play a major role in deciding how federal programs are carried out.

County governments and private agencies can often have the most direct impact of all. My colleague Ruth Hubbell studied the foster care system in one state. She found that though federal and state foster care laws were very supportive of families, the practices in county agencies tended to keep families apart. Visiting between parent and child was limited; requirements for return of the child were unclear; parents were given little information about their child's progress in school or health status.

Family Impact Analysis

FIS has developed an approach for examining the effects of policy on families, which we call family impact analysis.

Our approach is based on an ecological framework: a perspective that emphasizes the need to understand individuals not in isolation but in the context of their families, kin, neighborhoods and communities. Family impact analysis examines the different functions families perform (like economic support and child care) and how they may be affected by policy. It identifies various differences between families (like differences of income, structure, life cycle stage, and cultural background) that may need to be taken account of in examining family impact (Family Impact Seminar 1978).

We tested this approach by using it to conduct in-depth studies of three policy areas: foster care, teenage pregnancy, and flexible work schedules. These efforts produced useful, new insights into the policies under study, confirmed the value of our basic approach, and suggested ways to improve it. They are the first books in this country that apply a family impact perspective to the examination of specific public policy issues. Temple University Press published them this year and the initial reviews are very positive (see Temple 1981).

As encouraging as this research was, we were especially interested in discovering if family impact analysis could be a useful tool for organizations that deal with families on a day-to-day basis, and don't have research staffs or budgets. We believed that family impact analysis could be undertaken by many different kinds of organizations at many different levels.

To test this idea we next conducted an 18-month, nationwide field project with twelve local and state agencies in Texas, Washington, California, Minnesota, Missouri, Maryland, Michigan, Florida and Massachusetts. FIS provided training, technical assistance and a "Guide to Family Impact Analysis" to these organizations as they conducted family impact studies in their communities. These organizations included four community action agencies, four local PTAs, a hospital, and three children's agencies.

Each organization analyzed relevant laws and regulations, interviewed the officials who implement them, and learned directly from the families who are served how the policy being assessed actually affects them. The latter activity was key: the emphasis in

family impact analysis is on assessing how programs actually work by getting information directly from the people most closely involved -- the service providers and the families themselves. The agencies involved found the family impact analysis approach to be useful, their reports were insightful and pragmatic, several of their recommendations have already been implemented by relevant public agencies and organizations, and their practical suggestions have made our guide more helpful to service organizations like theirs.

Projects with State Government

Two of our current projects build directly on this field work. The first provides help to state governments interested in assessing how selected policies of theirs affect families. We are providing technical assistance to the Council on Children and Families in New York (part of the Governor's Office), the Department of Health and Rehabilitative Services in Florida, the Governor's Task Force on Family Policy in New Mexico, and the Governor's Advisory Committee on Families in Minnesota. In New York the focus is on the effect of part-time job opportunities and other workplace policies on families; in Florida they're including family impact questions in their annual reviews of program effectiveness; the New Mexico project is examining work/family issues; and the Minnesota project, which is just beginning, may focus on family issues in care for the aged. State interest in testing family impact analysis is growing. We will probably be working on comparable family impact analysis projects with leaders in the Illinois legislature and in Tennessee. In addition, we have received preliminary indications of interest from state agencies in Connecticut and Colorado.

Given the broad jurisdiction state governments already have over policies affecting families and the prospect that they will receive even more authority when part or all of the Administration's block grant proposals are enacted, we consider these opportunities to work with interested states on family impact analysis to be especially critical and timely.

Schools/Families Project

Another major project is our families and schools project. It reflects the growing awareness of the need to improve home-school collaboration and parental involvement in education. Yet existing research and demonstration programs usually focus on the "family" side of this equation; helping parents be better tutors of their children, aides in classrooms, etc. FIS, in contrast, is focusing in the other factor in the equation: school policies and practices. Our new project will identify and analyze federal, state and district level policies and administrative practices that affect collaboration between home and school in two states.

Our project will examine, for example, whether parent-teacher conferences are scheduled at times when parents in two-earner or one-parent families can realistically be expected to attend. Similar family impact questions will be raised about school policies and practices concerning "snow days," and written and other reports to parents about learning, behavior and health problems. In short, our project will seek to identify school policies and practices that facilitate positive interactions between families and schools, and those that impede such interactions.

Recommendations

On the basis of these experiences during our first five years of work, FIS made five specific recommendations to the WHCF (Family Impact Seminar 1980). Summaries of them appear below. I have modified several of them slightly to update and reflect our recent findings and conclusions.

1. Independent Commissions or Task Forces for Families should be created by interested localities and states, and at the national level, to insure that government policies help families rather than hurt them.
2. More organizations and agencies -- both public and private -- should examine and improve the ways in which their policies and practices affect families.
3. More organizations of families themselves should assess the impact on families of relevant policies or programs in their states or local communities.

These recommendations constitute positive steps that we believe public and private organizations should take in order to help make policies more sensitive and responsive to families.

There are two other suggestions concerning family impact and family policy which the Family Impact Seminar strongly opposes.

4. We oppose the suggestion that the environmental impact process can be applied directly and with little change to family issues. Family impact analysis differs substantially from the environmental impact approach.

Family impact issues are complex, value-laden, and delicate. Processes for family impact analysis must not include compulsory family impact statements, or the creation of government bureaucracies which could intrude or be perceived as intruding into the private lives of families.

The primary element that a family impact approach should try to borrow from environmental impact is heightened public consciousness; in this case, about the effect of public policies on families.

5. We oppose the idea of adopting a national family policy.

Such a policy implies that there is a simple, uniform, comprehensive federal policy that would be universally applicable to all families. This concept directly contradicts our respect for the personal, private, and unique qualities of family life. It also ignores the diversity and pluralism among American families that is a fact of life.

These recommendations, if adopted, can help bring out fundamental changes in our country's policymaking process; help make government and private institutions more sensitive and responsive to family needs and aspirations; underscore our respect for and commitment to family life; and help assure that families participate fully in the decisions that affect them.

They cannot of course, solve all the problems that face families. But we believe they can serve as a significant first step toward the day when decisionmakers in both the public and private sectors consciously and consistently assess the effects of policies on families.

Making It Happen

The tougher question, however, is not whether these recommendations can be a significant first step to families but whether they will be. At this point they are merely recommendations. And the sad fact is that too often those of us interested in families end our efforts prematurely. We conduct studies, develop recommendations, and disseminate findings. But we seldom mount sustained efforts to get our recommendations implemented. Recommending an idea is one thing; making it happen is quite another. If promising suggestions are going to provide any help in the real world, those of us who care about them need to become skillful advocates on their behalf. We need to learn how to use the political process, rather than letting it use us.

Politics has seldom been the strength of individuals and organizations concerned about human needs. Too often we have been reluctant to become involved in the political process; too hesitant to participate in the compromises that characterize most decision making.

There are no fool-proof formulas for influencing the policymaking process. But there are ways to increase one's political effectiveness, and I want to suggest ten. All of them are inexpensive, uncomplicated and non-partisan. For reasons of space I can only summarize the first five, as follows: (1) provide accurate information including cost benefit data whenever possible; (2) identify the leverage points in the policymaking process that affect your concerns and concentrate your efforts there; (3) have realistic expectations; (4) build coalitions around a single policy, not around your entire political philosophy; and (5) visit your elected representatives in their (and your) home districts whenever possible. These recommendations provide the foundation for the five that follow about which there is an opportunity to comment.

6. Present your case, at least in part, in human and personal terms.

One principle of human behavior seems to be that we all react more strongly when ideas are presented in human terms than when they are presented in statistics or theories. In addition, we are generally moved even more when the event is described by someone who experienced it personally. There is probably no area that includes more personal and human experiences than the field of human services.

It is puzzling, therefore, how seldom those of us concerned about families include human and personal stories in our own testimony or advocacy. Yet can there be a more persuasive and moving testimony for child care services than that of a mother who was able to leave welfare and get a job because child care was available? Can there be a more persuasive witness for home health services than an elderly man who is now able to care for his ill wife at home because such service exist? I think not.

This recommendation does not argue that there should be no statistical or scholarly testimony or that human service providers should not be witnesses. What it argues for is bringing some balance to our advocacy efforts.

7. Reach out to those who don't already believe as you do.

This is one of the easiest recommendations to understand, but one of the hardest to implement. It simply means "stop preaching solely to the converted."

Talking with colleagues to compare notes and plan joint activities is part of successful advocacy. You need to keep in touch, build and use networks, and mobilize the constituencies that already exist.

But that is not enough. You have to present your case to individuals and organizations you may know just barely, or not at all. This may mean for example, requesting chances to speak to organizations such as local service clubs, Chambers of Commerce and veterans' organizations which you may or may not normally address.

8. Compliment policymakers that support your causes, and do so in visible ways.

Politicians often receive 100 letters complaining about what they did "wrong" for every one complimenting them on what they did "right". Anger seems to energize people more than gratitude. Yet common sense suggests that human beings tend to respond more positively to being complimented for their "good" actions than by being criticized for their "bad" ones.

This pattern of negative responses to politicians presents an opportunity. The next time a politician does something you approve of call or write to express your appreciation. And continue to do so every single time he or she deserves it. One such communication will almost certainly help your next request get a favorable reception. Two or more will probably produce a friend for life.

Consider, also, how you can thank this policymaker in a visible way. If it is a matter of interest to your community, write a letter to the editor of the local newspaper describing the issue and commending the policymaker for his or her action. Do the same thing with newsletters of any organizations to which you belong. And send copies of any of your published letters to the policymaker. In these and other ways help the policymakers who are helping you see that their actions on your issues are both substantively correct, and politically advantageous. It is often not enough to simply urge our representatives "to do the right thing." Next time you urge them "to do the right thing" also make the effort to be sure they get some political credit for doing it.

9. Get involved in the electoral process on behalf of the politicians you support.

There are few if any qualities that politicians -- indeed most human beings -- value more than loyalty. This is especially true in an election campaign. As former Vice President Mondale is fond of saying, "I have met a lot of stupid politicians, but I've never met one who couldn't count." If you want to depend on politicians helping you when you need their help most, help them when they need your help most.

The most effective way is to become a member of his or her campaign. Contrary to the impressions many people have, political campaigns are one of the most accessible undertakings in American life. Don't be afraid that your offer to help will be turned down. There are never enough people to do the work that needs to be done.

10. Have staying power.

There is no single, more important characteristic of politically effective individuals and organizations than staying power. Politicians are impressed by people or causes that win elections or legislative contests. But they are just as impressed -- sometimes more impressed -- by people or causes that lose yet come back the next year, and as many succeeding years as necessary, to fight again.

Many of us concerned about human needs don't have a strong record of staying power. Part of it may have to do with having unrealistic expectations and becoming disillusioned when we cannot realize them. Or it may simply be that some of us are more comfortable being observers of political life than participants.

Whatever explains our reluctance, one important ingredient seems to be that many of us are moderates politically and personally. Ellen Goodman, the perceptive columnist, discussed the political consequences of moderation in a thoughtful column piece entitled, "The Immoderate Pursuit of Moderation":

Why is it that extremists are so much more tenacious moderates? As Ralph Nader said, "Extremists can best be described as men with iron bladders in iron cages....they never get tired, they don't resign, they don't quit out of futility."

But people who are moderate politically are usually moderate psychologically. They are the interpreters and conciliators of the world, the people who project into the lives and minds of others. Their ability to see the other side of the story leaves them even more confused.

It takes an extraordinary kind of person to be a devout middle-of-the-roader, an intransient moderate.

What we need now are some good, solid, dyed in the wool moderates -- sensible people with iron bladders.

With our convictions and with a serious commitment to strengthen our political effectiveness, those of us concerned with human services can substantially increase our chances of success in the policymaking process. With these attitudes and skills, we can overcome those formidable barriers that often stand between making a recommendation and making it happen.

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Session #7



1. INTRODUCTION

Today we acknowledge that the massive alteration of the natural environment made possible by modern technology and industrialization can destroy the physical ecology essential to life itself. We have yet to recognize that this same awesome process now has its analogue in the social realm as well, that the unthinking exercise of massive technological power, and an unquestioning acquiescence to the demands of industrialization can unleash social forces which, if left unbridled, can destroy the human ecology -- the social fabric that nurtures and sustains our capacity to live and work together effectively and to raise children to become competent and compassionate members of society (Bronfenbrenner, 1981).

In an article entitled "Children and Families: 1984," Urie Bronfenbrenner refers to George Orwell's prophetic prediction of the destruction of free Western society and its basic institutions, including the family, by the year 1984. He goes on to argue that while Orwell may have picked the right year and outcome, he was wrong in attributing that outcome to human efficiency rather than human ineptitude. Bronfenbrenner sees the erosion of the power of the family and the childrearing system as a product of public indifference, and he feels that we are failing to come to terms with some hard realities. The family intervention program described in this chapter is being carried out in an attempt to confront some of those realities.

The Family Matters project^{*} was established in 1976 with support from a variety of funding sources^{**} to study the "capacity (of urban American environments) to serve as support systems to parents and other adults directly involved in the care, upbringing, and education of children" (Bronfenbrenner and Cochran, Note 1, p. 1). To conduct such a study we set out in two complementary directions: one towards a better understanding of existing formal and informal support systems as they are currently affecting families with pre-school children, and the other toward supplementing what was already in existence. In this latter endeavor, trained neighborhood workers were made available to families to provide child, family, and community-related information through home visits and cluster groupings.

The Family Matters program was designed with some strong hypotheses in mind about how the worlds containing families are organized, and with some beliefs associated with those understandings. Therefore, before describing what actually has been taking place in our twelve study neighborhoods in Syracuse, New York, we shall provide a brief outline of our social scientific worldview and a short list of the beliefs underlying the programmatic activities that have been underway now for several years. This presentation of conceptual framework and underlying beliefs will be followed by a description of program activities and processes, and some early anecdotal indications of impact. In conclusion, we will raise a set of emerging and unresolved questions that deserve continued consideration as the research proceeds.

2. A CONCEPTUAL FRAMEWORK

The premise perhaps most fundamental to the Family Matters project is that in order to understand what is happening in families and how they function as contexts for human development it is not enough simply to examine the internal states of individuals, or even the interaction patterns of family members as they go about their daily activities inside the home. There are other social and structural systems surrounding the family beyond the micro-level which have received relatively little attention by professionals involved with American families but which may well contain the keys to a clear understanding of family dynamics and individual attitudes and behaviors (Bronfenbrenner, 1979). One such system into which all families with children are tied is what has been referred to in the sociological and anthropological literatures as the informal social network (Cochran & Brassard, 1979). Made up of relatives, neighbors, co-workers, and other friends, the social network plays a clearly documented part in the provision of information, social norms, goods and services, and crisis assistance to parents and children (Adams, 1968; Furstenburg, 1976; Gottlieb, 1979; Stack, 1974). A second major system encompassing individuals and families is institutional in character. The elements of this system are those workplaces, schools, formal social services, governing bodies and other legally established structures in our society which directly affect some family members and indirectly affect others (Bronfenbrenner, 1979). Finally there is the most all-encompassing system of all -- that set of beliefs which distinguishes our culture from others, and in so doing serves as a "blueprint" for the patterns of institutional structure, network linkage, family interaction, and individual perception characterizing American life (Bronfenbrenner, 1979). We argue that it is not enough simply to account for the influences on family life of forces at these four different levels of social and societal organization; one must also examine interactions among them. One must consider, for example, how American ideologies are reflected in the organization of the workplace and school (Carnoy & Levin, 1976), how having 15 relatives living close by affects childrearing practices and parental self-concept, how working overtime might affect relationships with spouse or activities with children.

This view of the ecology of human development as a nested set of social and psychological structures led us, when contemplating the design of an intervention program, to conclude that it is not enough to aim at individuals' perceptions of themselves or others ("self concept"), or at spousal interaction patterns in isolation ("family dynamics"), or at neighboring behavior ("networking"), or at changes in the behavior of schools or employers toward the families they rely upon ("organizational change"). We decided then, and continue to feel, that it is very important to keep all these aspects of family ecology in mind simultaneously while developing a program, and in implementation to be looking constantly for ways in which those systems interact to make life easier or more difficult for certain kinds of families or individuals. It is precisely this kind of an ecological frame that was used in the development of the Family Matters program, and through which we are viewing the events and changes that are now taking place in the process of program implementation.

3. BELIEFS UNDERLYING PROGRAM DEVELOPMENT

It is important to touch briefly upon the beliefs which we brought with us in developing the intervention and which are reflected in what the program looks like today. First and foremost is the belief that all families have some strengths. This is a conviction based upon our experiences with parents over the years, and it is as fundamental to success of the program as it is difficult for some people to understand, including, in the beginning, some of our program workers and a number of participating parents. We are consciously and actively engaged in an attempt to counter the deficit perspective (Bronfenbrenner, 1979a) which is one of the basic tenets of service provision in the United States. From this perspective comes the conviction that one need clearly demonstrate inadequacy or incompetence before becoming eligible for community based, family focused programs. So it is with AFDC, day care subsidy or job training programs in this country that the "client" must prove he or she cannot support the family before "assistance" becomes available. This perspective leads, in turn, to the "blame the victim" syndrome (Ryan, 1971), whereby the poor or unemployed person is viewed as the instigator of the very circumstances he or she is enduring. To avoid this stigmatizing aspect of intervention in the American mold we have made the Family Matters program available to a cross-section of the young family population in Syracuse; middle- to low-income families, white and black families, two-parent and one-parent families, and mothers working inside as well as outside the home are all included. Beyond open eligibility we use, as the cornerstone of our education program, the concept of family strengths, rather than deficits. Later in the chapter we will further elaborate this theme.

A second belief central to our programming approach is that the most valid and useful knowledge about the rearing of children is lodged among the people -- across generations, in the networks, and in the historically and culturally rooted folkways of ethnic and cultural traditions, rather than in the heads of college professors, trained professionals, or the books written by so-called experts (Berger & Neuhaus, 1977). We believe that the fundamental body of knowledge needed to raise children is firmly rooted in the collective consciousness of those among us who have already done it or are working at the undertaking right now. This does not mean that individuals necessarily know all they need to know in order to raise children successfully. We are convinced, however, that a given parent knows more about her or his child than anyone coming in from outside the family, except perhaps a close relative or friend, and that in that sense parents are experts and should be treated as such. What is increasingly difficult to identify are naturally occurring vehicles for the transmission of that information from one generation to the next, and for validation of the knowledge that young parents have accumulated from one source or another. We believe that knowledge housed in the collected experiences of group members can be made explicit and shared among individuals by linking people together at the neighborhood or community level and by reinforcing linkages that already exist. At the same time Family Matters staff operate with an appreciation of the forces which are pushing in the opposite direction, separating young families from each other and from experienced informants in older generations (Bronfenbrenner, 1974).

The third belief underlying program development is that a variety of family forms are legitimate, and can promote the development of both healthy children and healthy adults. This belief is buttressed by a growing body of evidence (Kriesberg, 1970; Hoffman, 1974) which shows that it isn't whether a parent is married or single, or working outside or inside the home, or black or white or red or yellow-skinned, that determines the capacity to rear a child successfully. The determining factor is none of those personal or family characteristics per se: rather we believe that successful childrearing turns upon the question of the resources that parents can marshal and bring to bear upon the task. Thus one very important goal for this research has been to understand better what really constitutes "resources," and how different types of supports and stresses interact to make parenting easier or more difficult.

Just as mothers can contribute to the strength of the family unit through work for pay outside the home, so fathers can help by playing an active role in activities with the child and in household tasks. This belief is buttressed by recent research documenting the contribution made by fathers to child development (Lamb, 1976). The Family Matters program contains elements designed expressly with fathers in mind.

The last belief underlying development of the program is an extension of several already mentioned; it is that cultural differences are both valid and valuable. If families have strengths, and if the parental knowledge that is the basis for those strengths is rooted in historical and social ties and in the rituals and traditions associated with those ties, then there must be value in the cultural and ethnic heritages which embrace those traditions and rituals. That ethnic and cultural groups distinguish themselves from one another within the urban context need not be perceived of as divisive. This behavior might better be thought of as essential to the maintainance of stability in a sea of uncertainty and change.

4. THE FAMILY MATTERS PROGRAM

The task of developing an educational program for young families was undertaken, then, with a clearly articulated set of beliefs and a multi-systems view of the forces affecting family life. The goals of that program are ambitious:

- 1) to reduce isolation,
- 2) to give recognition to parents as experts,
- 3) to reinforce and encourage parent-child activities,
- 4) to share information about children, neighborhood, services and work,
- 5) to encourage the exchange of resources among neighboring families and
- 6) to facilitate concerted action by project participants on behalf of their children.

To accomplish those goals we have undertaken a pair of strategies, each aimed at a different level in the overall ecological framework within which we are operating. Before describing the strategies in greater detail, however, a few words need to be said about setting and sample.

4.1 The Sample

About 150 families in Syracuse, New York are being offered the program, in 12 different urban and suburban neighborhoods. Each of these families contained a child who was three years old at the time of program entry. Families in two of the twelve neighborhoods piloted the program, beginning nine months ahead of the rest. The remaining ten program sites were randomly selected from a pool of Syracuse area neighborhoods stratified by income level (low, moderate, middle), geographic location (city, suburban), racial composition (white, mixed, black), and ethnic composition (ethnic, non-ethnic). Selected at the same time and using the same criteria were eight other neighborhoods, which are serving as an untreated contrast group.

Within each neighborhood families with three-year-old children were recruited using a house-to-house survey, local informants (pre-schools, day care centers, elementary schools, etc.), and birth records. Participating families were then selected using a stratified random sampling procedure, with special attention paid to race of child, sex of child, and family structure. This process produced an overall sample somewhat skewed

in the direction of one-parent and Black families, compared with the population of the Syracuse metropolitan area as a whole.

4.2 The Intervention

Before learning more about the two-pronged approach that we have been employing for the sharing of information with these families it is important for the reader to understand that we began, not with a combination of the two strategies, but instead by trying out each approach separately in different neighborhoods; parent-child activity home visits were conducted in some neighborhoods and group-building activities in others. With time, evidence accumulated which justified folding the two approaches together into a single program for all participating families. That evidence is discussed further, below, after separate presentations of the two information-sharing strategies.

4.2.1 Activity Home Visits

Our home and family-focused strategy takes the form of home visits with parents and their children and is designed to give recognition to the parenting role, reinforce and enrich parent-child activities, and share information about child care and community services. Our approach has been stimulated by the work of Levenstein (1970) and Karnes (1969), and an emphasis on parent-child activities has been supplemented by an explicit focus upon information-sharing among parents. The starting point is with the parents as experts about their own children, and so early home visits are spent learning the parents' view of the child and seeking out examples of activities that are carried out successfully with the child. Some parents, when asked what kinds of things they do well in relation to their three-year-old, could be quite concrete and specific, but others didn't know what our home visitors were talking about. That is, they found it extremely difficult to think of the childrearing process as a set of skills or activities that one could carry off more or less successfully. In those cases our workers have been able, via participant-observations, to identify instances in which a parent has coped successfully with a child-related situation or carried out a useful parent-child activity. By pointing out these successes it has been possible to help the parent begin to view child care as a skills-related and important process.

Once parents begin to sense that we are serious in our belief that they are important, and to figure out what is meant by parent-child activity, they identify for us the things that they do with their children which they think are kind of special and make a difference both to parent and child. Our workers bring such activity examples back to the office, write them up in a standard format, and return them to the parent along with a request that other project workers be permitted to share the activity idea with other families in the program. This process accomplishes two goals; first, it further recognizes the parent as important and productive, and second, it is a way of gathering parent-child activity information from parents for parents, rather than relying upon the "professional as expert" model which many of our parents had come to expect from outside agents.

The effect, we suggest, is to change many parents' perceptions of themselves. They stop viewing themselves as adults trapped by the important but unrewarding job of raising children, and begin to see parenthood as a central part of community life, in which they have a unique contribution to make and for which they deserve special recognition.

As time passed and a strong trust relationship was forged between home visitor and family, some parents began to ask for other kinds of information. Those requests were of three general sorts: for information about child development ("Is my child develop-

ing normally?"), for suggestions as to where to turn for resources to address needs not directly related to parenting (like landlord difficulties, or marital discord, or trouble getting food stamps), and for a list of the other families in the neighborhood belonging to the Family Matters project and receiving home visits. We have provided basic child development and childrearing information to families in fact sheet form from the local Cooperative Extension office. For basic needs like housing, employment, legal assistance and food we have tried to make referrals to other local agencies and organizations in as personalized a fashion as possible.

4.2.2. Clusters and Groups

The requests for information about other families in the neighborhood by home-visited families were extremely important, because they served as a bridge to the other aspect of the program, the linking component. The goals of this linking strategy have been to reduce feelings of isolation by bringing families together at the neighborhood level, to encourage the sharing of information and informally available resources among families, and, when parents voiced a need to have changes made in the neighborhood, to facilitate action in pursuit of those changes. In this second approach we have stressed the value of clusters and groups of families, rather than the self and parent-child systems. The systems of special interest are those natural helping networks of neighbors, relatives, and friends upon whom many families depend for information and a wide variety of essential services (Cochran & Brassard, 1979; Gourash, 1978).

The initial home visits in the group-building neighborhoods were limited to a process whereby worker and family got to know each other and the worker could learn from parents how they felt about the neighborhood as a place to bring up children. After this relatively brief initial period of familiarization with individual families the worker set out to arrange a first group meeting, of which the purpose was to introduce neighboring families to one another in a friendly and supportive atmosphere, and begin to get a sense from the group of what changes in the neighborhood might contribute to making life easier for families with children living there. Child care is provided at all Family Matters gatherings, and so parents were encouraged to bring their children with them. There was always time for parents to socialize with each other, and the worker/facilitator also looked for ways to encourage participants to utilize each other as resources outside the regular group.

4.5 Effects of the Program on Families

While we have not yet compared changes over time in our program families with those of the carefully matched control group (from whom we also collected baseline data on parent-child activities, network helping patterns, and environmental stress), process-oriented monitoring of participating families gives us reason for some optimism. Anecdotal evidence, gathered from program workers and families, indicates that program involvement is affecting families at a number of different levels, starting with changes in perceptions of self and progressing outward through the dynamics of nuclear family life to neighboring patterns and community action.

4.5.1 Self-perceptions

At the most personal level, consider the mother who explained to the home visitor that she was no good at arts and crafts. After a year of involvement with parent-child activities she is now doing the story hour at the local library, drawing the story as she goes. Or the mother who, when first approached by a Family Matters worker, was quiet

and homebound, uninterested in meeting neighbors. Attracted to one group meeting by interest in a special topic, she suddenly blossomed, and is now a member of a neighborhood committee and a local scout leader.

At the individual level, and more directly affecting the child, are lessons learned by some parents from the home visitor which make it possible for them to manage the complexities of family life more successfully (Keniston, 1977). Some of this knowledge has pertained to choice of school for the Family Matters child, now five years old. This process has been complicated by a bussing system recently instituted in the city to better integrate the public schools. One black mother has been able to get her five-year-old into the same school as an older sibling because of information about the "system" provided by the home visitor. In another case a single mother who needed a kindergarten program to fit her work schedule was helped to accomplish her goal by discussion with a sympathetic Family Matters worker.

4.4.2 Interconnections

Once families in the neighborhood have been introduced to each other, those informal helping patterns which are described in the literature as so characteristic of natural networks begin to unfold. Three short vignettes illustrate the phenomenon. First, in one of our racially mixed neighborhoods a black and a white family were introduced to each other through the program. The white parents felt positive toward and had good connections in the nearby elementary school; the black parents and children were very negative toward the same school. In this instance, via the connections of their new friends, the same black parents were able to find a way to make the school work for them. At the same time, the teenagers in the black family have begun to do baby-sitting for the neighboring Family Matters child.

In the second case, in a different neighborhood, two families became friends through the program. When one couple decided to separate, each partner was able to receive emotional support from the same sex counterpart in the other couple.

The third example involves a couple who had been advised by the nursery school teacher not to enroll the Family Matters child in kindergarten at the prescribed time, but to wait a year. Eager to have the child start school, but anxious to do the "right" thing, the parents shared their concerns in the neighborhood cluster to which they belonged. The other parents in the cluster supported the idea of kindergarten enrollment, pointing out that the social experiences would be positive and that the worst consequence would only be the need to repeat the year of kindergarten. The parents went ahead with confidence and a commitment to work with the school in order that the experience be a positive one for the child.

Information, advice, connections, baby-sitting, emotional support, response to crisis - this is the stuff of informal support and that elusive sense of community. At times our neighborhood groups have become energized enough to undertake changes in the neighborhood: getting the city to fence in a creek-bed dangerous to children; pushing the Department of Parks and Recreation to clean up the local park, establishment of a neighborhood safety watch, the identification and better utilization of rent subsidies available to low-income parents. But more often the changes have been less visible and perhaps more lasting: the informal exchanges of information, advice, goods, and services that characterize a healthy community.

5. MEASURING PROGRAM IMPACT

In our general model we postulate that face-to-face parent-child activities are prerequisites to successful performance by the child outside the home. We go on, in turn, to propose that the ability of the family to provide such developmental experiences for the child is dependent upon the amount of recognition and support provided to the parents by the social and economic world outside the family. Our intervention programs are designed to provide recognition and support to parents at two levels: inside the home and within the social fabric of the neighborhood. Program effects must be looked for, therefore, in the ways parents relate to key formal institutions (especially the school), in the relationships of parents inside their own social networks (especially with neighboring families), in parental perceptions of support or stress in key domains (neighborhood, school, work), in parents' perceptions of themselves as parents and as partners, in their perceptions of the child as easy or difficult to rear, in the quantity and quality of the activities they engage in with the target children, and in the success with which the child engages in activities beyond the parent-child dyad (including school). These indicators of program impact are spelled out in greater detail below, with a specification of where data bearing on the indicators will be found in our research instruments. (S&S = Stresses and Supports Interview, SN = Social Networks Interview, CCA = Caregiver-Child Activities Interview)

- a. Parental transactions with key institutions in the exosystem. Special emphasis on the primary school, as programs aim to empower parents in ways which will be reflected in school-related transactions (S&S).
- b. The expansion of informal network ties, and the increase in exchanges with key members of the pre-existing network. Changes should be especially apparent in the neighborhood sector (SN).
- c. Parental perceptions of support and stress. There should be more positive perceptions of the neighborhood, child care arrangements and key agencies and organizations, including the primary school (S&S).
- d. Parental self-perceptions, as parents and partners. The programs are designed to increase self-esteem and involve the father in childrearing. These changes should be manifested in both mother's and father's perceptions of self as parent and spouse (S&S).
- e. Parental perceptions of the child. With increased recognition of the parenting role, both by the home visitor and the neighborhood network, should come changes in the perception of the child as blessing or burden (S&S).
- f. Parent-child activities. A major thrust of the program is encouragement of these activities. Parents should be more aware of the importance of activities and more involved in carrying them out (CCA).
- g. Child Performance, in first grade, and in activities at home when not in interaction with caregivers. Teacher and parent perceptions (S&S, Teacher interview).

Employment patterns vary tremendously in our sample: two parents, one working full-time; two parents, one full and the other half-time; two parents, both full-time; two parents, one working 1 1/2 jobs; one parent, working full-time; one parent, working part-time; one parent, not working. The temptation to tailor program offerings to accommodate at least some of these differences has been too great to resist. Perhaps that temptation is the curse of the ecological perspective. At the same time, we have taken refuge in the fact that our fundamental, underlying goals have remained the same for all families: to promote in parents a positive self-awareness through recognition for

the parenting role, to encourage constructive dyadic activities involving the child and one or more regular caregivers (usually the parent(s)), and to link families together at the neighborhood level by facilitating the formation and maintenance of family clusters and groups.

7. FAMILY MATTERS AND THE FUTURE

Our neighborhood-based program in Syracuse ends this summer (1981). However, we are in the process now of initiating a major national program dissemination effort, which will continue for a two year period with the support of the Cooperative Extension Service, USDA and the Kellogg Foundation. This undertaking will involve development of a set of educational materials for state-wide pilot testing and national dissemination. We hope that one component will consist of a consciousness-raising film and discussion guides. The film would contrast the debilitating effects of typical "family assistance" schemes, which require the "client" to demonstrate inadequacy before becoming eligible for help, with the enhancing effects of programs like Family Matters and some others which build on existing family strengths and rely upon parents to define their own needs. The discussion guides would be designed to help viewers clarify their thoughts and reactions to the film, and to become thoroughly grounded in the basic concepts of empowerment.

The other major component in this set of educational materials will consist of five action modules. These modules will be training packages designed to assist educators, family service workers, and non-professionals in validating the efforts of parents through the provision of useful information from a variety of sources. The following subject matter areas are currently being considered for these training modules:

1. Home activities - a guide to home-visiting from the empowerment perspective. Useful to audiences like parent aides and public health nurses.
2. Cluster groupings - a guide to the formation and maintenance of informal neighborhood groups.
3. The home-school interface - designed to improve communication between parents and teachers, and increase the involvement of parents in school decisions affecting their children.
4. The parent as worker - ways of helping parents examine the fit (or lack of it) between their roles as parent and worker. Strategies for change.
5. Family values - techniques for providing parents with greater awareness of the values they wish to instill in their children, and where those values originated.

We will pilot test these materials in a variety of upstate New York sites, and in New York City, and then introduce them to colleagues in other states through a series of regional workshops.

8. EMPOWERMENT FROM WITHIN OR WITHOUT?

Perhaps the most important question raised by our research is whether strategies for empowering family members are better applied at the individual and network levels or at the institutions and belief systems which govern so much of daily life. Clearly, Family Matters has opted for the former strategy. Fortunately we have done so within the framework of a theoretical perspective which is very sensitive to the more encompassing forces affecting development. So while extremely committed to the task of energizing parents on behalf of themselves and their children we remain at the same time highly cognizant of the factors which interfere with and seriously impede the good intentions of parents and of parent groups. Reference was made earlier to anecdotal evidence indicating that program activities are having some of the positive impacts sought by

those of us designing them. Just as important, however, is what we are learning about the circumstances faced by families over which they have very little control, even as organized groups, but which do much to define the quality of their lives and future prospects for their children. In our sample examples include:

- Jobs which require parents to work alternate shifts, and to see each other only in bed and on week-ends.
- Absentee landlords who are raising the rent so often that some of our families have moved four or five times in the two years that we have known them.
- The young mothers who, unable to find a job or other source of decent income, have turned to prostitution.
- The father who, having lost his job, won't leave the house even to visit friends.
- The man who is working two jobs and going to night school in order to move up out of poverty but feels guilty because he has no time left over to spend with his children.

These are the kinds of situations that are being documented, which are being further exacerbated by the current economic downturn. Stimulating parent-child activities, well-functioning helping networks and optimal access to existing formal services cannot alter these overriding societal forces; they can only cushion children and parents against their most devastating effects. We have chosen, in Family Matters, to employ a strategy which asks parents to test the limits of their capacity to change neighborhood helping patterns, parent-child activities, and home-school ties in ways which will enhance the development of the child. Perhaps the constraints imposed by these limits leave so little room for negotiation that attempts to intervene at the individual or family level are unrealistic. If so, then the alternative, assuming an unwavering commitment to improving the circumstances within which young families must rear children, is to intervene at a higher ecological level. Within our model that means the exosystem, which contains the world of work, the schools, and the media. Of these institutions there is reason to believe that the workplace reaches most directly into the lives of young families. We are closely examining the work-family interface in our Family Matters sample for indications of work-related practices which, if altered, might make child-rearing easier for young parents. Perhaps most importantly, we recognize that only by pressing the individual and family-centered self-help strategy to its limits can we really illuminate the institutional obstacles to its success.

FOOTNOTES

- * The ideas expressed here have been heavily influenced by colleagues and friends. Urie Bronfenbrenner and William E. Cross, Jr. have both made major contributions. Ingerid Bo helped greatly by forcing us to clarify and sharpen our thinking, as did Ray Rist. Our program and liaison workers in Syracuse deserve the credit for testing early concepts against the crucible of reality. Useful feedback has come also from sources more external to the project; NIE site visitors, colleagues trying similar approaches (David Olds, Peter Dawson, Douglas Powell, Lois Wandersman), and participants at the Educational Testing Service Conference on Changing Families. Finally, and most importantly, participating families have been patient with our false starts and generous with both praise and criticism. We thank them all.
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OUTLOOK '82



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Food Grain Overview

Food grains, wheat and rice combined, make up nearly two-thirds of all the grain consumed, in a more or less direct manner, as food around the world. Given the importance of wheat and rice as food staples, and with food grain production accounting for just under half the world's annual output of grain, it is important that, before getting heavily into the 1981/82 outlook, the discussion focus initially on the world food grain situation as it developed over the 1980/81 season and the types of pressures evident as the 1981/82 season began.

The world food grain situation continued to tighten in 1980/81. Production increased from the 1979/80 level but remained below world requirements and world ending stock of food grains declined to their lowest level as a percent of total utilization since mid-1970's. In fact, a year ago, some agricultural experts warned that another year of bad weather in 1981 would cause a world food-supply crunch. Thus, the world food grain situation and outlook as the 1981/82 season approached was unusually volatile.

On a global basis, however, Mother Nature was relatively kind in 1981 and world food grain production is now estimated at a record 855.1 million tons, up 2.4 percent from the 1980 level. The increase, well over half of which was in the United States, will be more than enough to meet the growing world food grain needs in 1981/82 and allow for a buildup in ending stocks. The world's overall stocks-to-use ratio for food grains should increase from 13.6 percent at the end of the 1980/81 season to 13.8 percent at the close of this 1981/82 season.

While both the world wheat and rice crops are expected to reach record levels in 1981/82, trade levels will move in opposite directions for these two grains. Import demand for wheat is expected to rise sharply--to a record level--but will contract for rice.

World Wheat Outlook

World Wheat Crop for 1981/82 Could be a Record

At the level currently forecast, world wheat production would be above trend and a new record at 448 million tons--only 1 million

tons larger than the previous 1978/79 record, but 2 percent, or 9 million tons above the 1980/81 level. A record area of 238 million hectares will be harvested this year but global yields, while up slightly from last year, remain 4 percent below the record yields of 1978/79.

Much of the production increase will come in the United States. Foreign production will, in fact, not quite reach last year's level. Prospects in the major exporting countries are extremely good. Australia's crop, which is now beginning to be harvested, is now forecast at 15.1 million tons, up nearly 40 percent from last year. Generally favorable weather and near ideal conditions at harvest time resulted in a Canadian wheat crop estimated 27 percent larger than last year. Recent dry conditions in parts of Argentina have caused some reduction in wheat prospects for 1982, but current forecasts still call for an increase of 15 percent from this year's crop. Also, the European Community has another large crop, although not the record earlier anticipated.

The overall net production increase of 19 million tons in the major wheat exporting countries more than offset the production declines in the major importing countries, largest of which is in the USSR. Soviet wheat production this year is forecast at 90 million tons--8 million tons less than the poor 1980 harvest. The cumulative effect of hot dry weather on yields and a small reduction in harvested area are the major factors behind the Soviet production decline. Other major production declines are forecast for Eastern Europe, Brazil, and Spain. In Eastern Europe, Hungary and Romania have harvested low crops while Poland's production remains stagnant. Brazil's wheat crop was hit by frost in June and July which cut heavily into wheat yields and Spain was hit with the most severe drought of the century. In summary, major exporters are expected to increase wheat production by 12 percent from 1980/81 while the major importing countries will see a net decline in production of almost 7 percent.

Utilization in 1981/82 to Be Up From Last Year's Level--But Less than Production

Total wheat utilization this year is estimated at 446 million tons, up 2 million tons from the level for the last two years. The expected increase in wheat utilization in the United States (the result of increased feed use) will more than offset the declines in the rest of the world. Foreign utilization of wheat this year is actually expected to fall about 2 million tons, or one-half of one percent from the 1980/81 level. The biggest drop in the use of wheat is expected to occur in the USSR, where the third successive poor wheat harvest and low stock levels are expected to further the shift underway in the USSR toward a heavier dependence on coarse grains for feeding-away from wheat. For example, total feeding of grains in the USSR is expected to be up 2 million tons in 1981/82, but wheat feeding is forecast to be down 3 million tons.

In most other major wheat consuming regions/countries--China, India, North Africa/Middle East, Pakistan, and Bangladesh which together account for almost one-third of world wheat utilization--consumption (almost totally for human use) will be up an average of 4 percent.

While total world utilization of wheat is to remain static at last year's level, food use of wheat--which makes up about 70 percent of total wheat utilization--is expected to increase by just over 2.2 percent. On a per capita basis, the consumption of wheat as a food staple would increase slightly, by about 0.5 percent during 1981/82. By comparison, per capita wheat consumption over the 1970's grew at about 1.3 percent annually.

The slower rate of growth in per capita food wheat consumption is partly related to the continuing poor economic prospects worldwide, particularly in the low-income developing countries where deteriorating economic prospects and balance of payments problems will not easily allow increased food needs to be translated into an effective cash demand for food grains. At the same time, food aid levels are not expected to rise.

World Stocks Position To Improve Somewhat

For the last two years, world use of wheat has exceeded world production. Stocks as a percent of use dropped from a relatively high level of 23.4 percent in 1978/79 to 16.6 percent at the end of the 1980/81 season. This year, however, world wheat production is expected to exceed total use by 1.5 to 2.0 million tons. Stock levels by the end of the 1981/82 season should be up by a like amount to about 75 million tons, and the stocks-to-use ratio by the end of this year could increase to about 16.8 percent.

Contrary to the pattern of stock adjustments for coarse grains and rice, whereby the United States is expected to bear the major part of the world adjustment, the world stock buildup for wheat will not take place in the United States. In fact, U.S. stocks are forecast to drop substantially from the ending levels of last year. All the positive stock adjustment will take place in foreign countries. The major importing countries are expected to see some minor improvement in stock levels, and the group of major foreign exporting countries expects a stock buildup of about 1 million tons by the end of 1981/82. However, the bulk of the foreign adjustment--over two-thirds of the 3.5 million ton foreign stock buildup--will take place in "other" importing countries. There have been a few surprise entrants to the world wheat market as "other" importers this year--namely, India and Turkey. Turkey is normally a net exporter of wheat, and India is re-entering the wheat import market for the first time since 1976/77.

For both India and Turkey, 1981/82 wheat production is forecast to be as large, or larger, than last year's level, but both countries have already contracted for significant amounts of wheat and are expected to make further purchases. Government imports by these two countries are being made in order to build public stock levels which have dropped to low levels because of below target progress of government procurement, despite the greater wheat production.

World Trade to Set New Record

Despite foreign countries' reduced level of wheat utilization for 1981/82, world trade in wheat on a July-June basis is expected to increase appreciably--up more than 10 percent to over 103 million tons. This growth in world wheat trade is largely the result of the pattern of production changes for 1981/82--the major importing countries, especially the USSR, Eastern Europe, Brazil and Spain, having a particularly poor production year while the major exporting countries having what amounts to a record production year. Such a pattern of "haves" and "have nots" will lead to a record world trade level despite the static nature of worldwide requirements for wheat.

Most of the increase is expected to result from the larger requirements of the developing countries, which account for about two-thirds of the world's wheat imports. In the Far East, India may import 4 million tons, largely to maintain supplies for the public distribution system. Despite India's improved wheat harvest, only 6.5 million tons of wheat has been procured by the government against the target of 9.5 million tons. China is also expected to remain a larger buyer in 1981/82, with imports forecast at 14.0 million tons, slightly more than last year.

In the Near East, imports are forecast to expand behind the continued rise in the requirements of Egypt, Iran and a number of oil producing countries in the region. Imports into the Africa region will be highlighted by larger requirements in Morocco following the prolonged drought there. Latin American imports are also forecast to be larger, mainly due to the increased requirements of Brazil, where the wheat crop is expected to be smaller.

Smaller harvests in Europe will cause increased imports on the part of Spain and Portugal in Western Europe and by Poland and Romania in Eastern Europe. Imports by the USSR will be record large this year and are currently forecast at 18.0 million tons.

Larger exports are expected on the part of all the major foreign exporters, with the exception of a fall off in European Community exports for 1981/82. However, most of the additional wheat import requirements are expected to be met by the United States. Wheat exports by the United States could reach nearly 52 million tons, up almost 10 million tons or 26 percent from last year.

Transportation constraints in Canada along with lowered crop expectations in the European Community, and recently lowered expectations in Australia have left the United States to fill the growing world import needs.

Further changes in the level of world or U.S. trade in wheat for 1981/82 will primarily depend on the amount of wheat imported by the USSR and/or the magnitude of India's entrance into the import market. In addition, recent dry weather in Argentina and Australia has opened the possibility of further reductions in wheat availabilities from non-U.S. sources.

Price and Short-Run Outlook

Historically, world stock-to-use ratios and the overall level of U.S. wheat stocks have proved fair barometers of world wheat price movements. However, for 1981/82, these two indicators are likely to be moving in opposite directions. Given the likelihood of an ending stock buildup for world wheat, the stocks-to-use indicator would point to some slight downward pressure on prices. On the other hand, the U.S. ending wheat stock level--probably the most important indicator this year--will likely be down from last year and that should provide some strength to world wheat price movements for the remainder of the year. Other factors likely to influence world price levels over the next few months would be a final outcome of Southern Hemisphere harvests in Australia and Argentina substantially lower than currently forecast or a significant change in import demand.

For the 1982 foreign wheat crop, generally favorable weather should allow a return to trend level production. In the USSR, the probability of a fourth straight year of poor wheat harvests would seem quite small given historical production patterns. But even if the USSR were to harvest a larger wheat crop next year, they would be expected to continue sizeable imports in order to rebuild depleted stock levels. World trade in wheat would likely remain large in 1982/83.

World Rice Outlook

Record Rice Crop Expected In 1982

World rice production for 1981/82 is currently forecast at a record 408 million tons on a rough basis (274 milled), up 2.8 percent from 1980/81. This increased production reflects an overall improvement in global yields of about 2.2 percent from last year and a record area harvested. The United States is expected to harvest a record rice crop--up 20 percent from last year. Favorable weather in the rest of the world, particularly in many of the major producing and importing countries, thus far points to an

increase in foreign production of 2.4 percent (9.4 million tons), and a new record foreign level.

This year's monsoon season brought generally good but erratic rainfall to most areas of South Asia. Crop conditions in some parts of the region deteriorated in August and September, particularly in India. Total Indian rice production this year is now forecast to be lower than last year's record level. Conditions, in Burma and Pakistan were generally more favorable and rice production in those countries will be up from last year's level.

The major rice production increases for 1981/82 will be in the East Asia region particularly in Indonesia, Japan, and South Korea. Production increases in Indonesia and South Korea, the world's leading rice markets in 1981, will substantially reduce world import requirements. China, which accounts for over one-third of the world's rice production, is forecast to have a larger rice crop, up 2 percent from last year. However, some decline in area planted and some loss to flooding is expected to keep China's production below the 1979/80 record level.

Utilization Expected To Be Up; Stocks To Increase Modestly

World rice consumption is projected to increase about 2.3 percent in 1981/82, allowing for an increased per capita consumption level of rice worldwide. However, the increase in consumption is smaller than that for world rice production and ending stocks in 1981/82 are expected to build to 24 million tons, or about 9 percent of world consumption requirements. A sizeable stock build-up in the United States will more than offset the stock drawdowns in Japan and India, which together account for about 40 percent of world rice stocks. Japan has begun to use rice as feed in a policy move designed to reduce high stock levels.

Rice Import Demand To Fall

Despite the increase in world rice requirements, world trade is expected to fall in 1982. The pattern of production increases is almost the reverse of wheat--output in the major importing countries being substantially greater than the production increases in the major exporting countries.

With the major importers better able to meet requirements from domestic production, world import demand for rice is likely to fall to 12 million tons in 1982 from the record 13.5 million tons for calendar year 1981. The record level of trade in 1981 was the result of sharply increased Korean import needs because of a near disastrous 1980/81 rice harvest. Korean imports in 1982 are expected to drop to 0.7 million tons, or about one-third their 1981 level. As a major world market as well as the major U.S.

market, the reduced magnitude of Korean rice imports will have a sizeable impact on world and U.S. rice exports, especially California rice.

It is interesting that, as a result of the larger Korean crop, we will likely see a shift in the rank/order of world rice importers in 1982. Indonesia will regain its position as the world's number one rice importer; Korea will fall to third or fourth largest; and the position of second largest rice importer will be taken by a country we often forget as a major rice importing nation, the Soviet Union.

Food Grain Summary

The world food grain situation for 1981/82 is characterized by record production, slowed food grain demand, and rising global stocks. U.S. exports of wheat will be record large in 1981/82, but the level of U.S. rice exports will fall for 1982. Any further significant increase in world import demand in 1981/82 would likely boost U.S. food grain exports as well as world price levels.

World Wheat Production

Country/Region	Preliminary: Forecast		Change	
	1980/81	1981/82	Actual	Percent
	-----Million Metric Tons-----			%
<u>Major Exporters--"The Haves"</u>				
United States	64.5	74.8	10.3	+16.0
Argentina	7.8	9.0	1.2	+15.4
Australia	10.8	15.1	4.3	+39.8
Canada	19.2	24.4	5.2	+27.1
European Community	54.8	52.5	-2.3	-4.2
Total	157.1	175.8	+18.7	+11.9
<u>Major Importers--"The Have Nots"</u>				
Eastern Europe	34.5	31.0	-3.5	-10.1
USSR	98.1	90.0	-8.1	-8.3
China (PRC)	54.2	56.0	+1.8	+3.3
Brazil	2.7	1.8	-0.9	-33.3
North Africa	6.2	5.6	-0.6	-9.7
Spain	5.9	3.5	-2.4	-40.7
Total	201.6	187.9	-13.7	-6.8
World Less U.S. (Foreign)	373.7	372.7	-1.0	-0.3
World	438.2	447.5	+9.3	+2.1

World Wheat Trade (July-June)

Country/Region	: Preliminary:	Forecast :	Change	
	: 1980/81	: 1981/82	: Actual	: Percent
	:	:	:	:
	: -----	Million Metric Tons	-----	%
	:			
Major Exporters:	:			
United States	: 41.9	51.7	+9.8	+23.4
European Community	: 14.0	13.5	-0.5	-3.6
Canada, Australia, Argentina	: 31.5	34.0	+2.5	+7.9
	:			
	:			
Major Importers:	:			
Asia (Less PRC and Japan)	: 10.0	14.5	+4.5	+45.0
India	: ---	4.0	+4.0	NA
PRC	: 13.8	14.0	+0.2	+1.4
Middle East	: 1.7	2.0	+0.3	+17.6
Africa	: 12.1	13.3	+1.2	+9.9
Latin America	: 11.7	12.2	+0.5	+4.3
Europe	: 7.3	8.2	+0.9	+12.3
USSR	: 16.0	18.0	+2.0	+12.5
	:			
World Trade	: 93.6	103.2	+9.6	+10.2
	:			

World Rice Production (Milled)

Country/Region	Preliminary:		Forecast :		Change	
	1980/81		1981/82		Actual	Percent
	-----Million Metric Tons-----					%
Major Exporters:						
United States	4.8		5.9		1.1	+22.9
Thailand	12.2		11.9		-.3	-2.5
China (PRC)	94.7		96.6		1.9	+2.0
Pakistan	3.1		3.2		.1	+3.2
Burma	7.7		7.8		.1	+1.3
Japan	8.9		9.8		.9	+10.1
Total	131.4		135.2		3.8	+2.9
Major Importers:						
Indonesia	20.2		21.8		1.6	+7.9
South Korea	4.0		5.5		1.5	+37.5
Total	24.2		27.3		3.1	+12.8
World Less U.S. (Foreign)	261.6		268.0		6.4	+2.4
World	266.4		273.9		7.5	+2.8

World Rice Trade (Calendar Years)

Country/Region	Preliminary:		Forecast :		Change	
	1981		1982		Actual	Percent
	-----Million Metric Tons-----					%
Major Exporters:						
United States	3.0		2.6		-.4	-13.3
Thailand	3.2		3.0		-.2	-6.3
China (PRC)	.6		.8		.2	+33.3
Pakistan	1.2		1.0		-.2	-16.7
Burma	.8		.8		0	0
Japan	.9		.4		-.5	-55.6
Major Importers:						
Indonesia	.5		1.0		.5	100.0
South Korea	2.1		.7		-1.4	-66.7
World Trade	13.5		12.0		-1.5	-11.0

World Food Grain Summary

	:	1975/76-	:	:	:Preliminary:	Forecast		
	:	1977/78	:	1978/79	:	1980/81	:	1981/82
	:	AVERAGE	:	:	:	:	:	:
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World Wheat Summary

	: 1975/76- :	:	:	: Preliminary:	Forecast
	: 1977/78 :	1978/79 :	1979/80 :	1980/81 :	1981/82
	: AVERAGE :	:	:	:	:
	:				
	:		-- Million Metric Tons --		
	:				
World:	:				
Production	: 385.6	446.6	422.3	438.2	447.5
Utilization	: 378.0	430.0	443.9	443.9	446.1
Ending Stocks	: 81.9	100.8	79.2	73.5	74.9
Stocks/Utilization (Percent)	: 21.7	23.4	17.8	16.6	16.8
Trade	: 73.5	72.0	86.5	93.6	103.2
	:				
United States:	:				
Production	: 57.4	48.3	58.1	64.5	74.8
Utilization	: 21.2	22.8	21.3	21.0	25.4
Exports (July-June)	: 29.5	32.3	37.2	41.9	51.7
Ending Stocks	: 26.8	25.1	24.5	27.0	24.7
U.S. Stocks/Total (Percent)	: 32.7	24.9	30.9	36.7	33.0
	:				
Soviet Union:	:				
Production	: 85.1	120.8	90.2	98.1	90.0
Utilization	: 95.4	106.5	115.8	115.6	107.2
Imports	: 7.1	5.1	12.1	16.0	18.0
Exports	: .8	1.5	.5	.5	.8
Stocks Change	: ---	+18.0	-14.0	-2.0	---
	:				
Rest of World:	:				
Production	: 243.1	277.5	274.1	275.6	282.7
Utilization	: 261.4	300.7	306.8	307.3	313.5
Imports	: 65.6	66.9	74.4	77.6	85.2
Exports	: 43.2	38.2	48.8	51.2	50.7
Net Imports	: +22.4	+28.7	+25.6	+26.4	+34.5
	:				

World Rice Summary

	: 1975/76- : : 1977/78 : : AVERAGE :	: 1978/79 : :	: 1979/80 : :	: Preliminary: : 1980/81 : :	: Forecast : 1981/82
	:				
	:		-- Million Metric Tons --		
	:				
World:	:				
Production	: 242.7	259.2	253.8	266.4	273.9
Utilization	: 238.7	255.0	258.7	266.3	272.5
Ending Stocks	: 20.0	27.7	22.8	22.9	24.3
Stocks/Utilization (Percent)	: 8.4	10.9	8.8	8.6	8.9
Trade	: 9.6	11.8	12.3	13.3	12.4
	:				
United States:	:				
Production	: 3.7	4.3	4.3	4.8	5.9
Utilization	: 20.0	27.7	22.8	22.9	24.3
Exports (Calendar Year)	: 2.0	2.3	2.7	3.0	2.6
Ending Stocks	: 1.1	1.0	.8	.5	1.8
U.S. Stocks/Total (Percent)	: 5.5	3.6	3.5	2.2	7.4
	:				
Soviet Union:	:				
Production	: 2.1	1.3	1.5	1.6	.1
Utilization	: 1.7	2.0	1.8	2.2	3.1
Imports	: .4	.6	.7	1.0	.9
Exports	: ---	---	.1	.1	.1
Stocks Change	: ---	---	---	---	---
	:				
Rest of World:	:				
Production	: 236.9	253.6	248.0	260.0	267.9
Utilization	: 217.0	225.3	234.1	241.2	245.1
Imports	: 8.2	11.2	11.4	12.8	9.3
Exports	: 7.6	9.5	9.5	10.2	9.7
Net Imports	: +.6	+1.7	+1.9	+2.6	-.4
	:				

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1982 Agricultural Outlook Conference, Session # 8
Washington, D.C.



Tuesday, November 3, 1981

1981/82 Situation - A Year of Records

The 1981 U.S. wheat crop was a record 2.75 billion bushels, up 16 percent from last year. This huge crop was brought about because of a 10 percent increase in planted acreage (an all-time high of 88.8 million acres, Table I), a nearly 14 percent increase in harvested acreage and a near record yield of 34.1 bushels per acre, about 1 bushel higher than in 1980.

The 1981 U.S. wheat crop developed through a variety of conditions--from drought at planting; late spring freezes; to excessive rains during harvest--but the hardiness of the wheat plant prevailed. Total 1981/82 marketing year supplies at 3.74 billion bushels is 14 percent above last year's all-time record.

Planting of the 1981 winter wheat crop took place under dry soil conditions in the Plains which slowed good plant development needed before winter dormancy. Reseeding was necessary in many areas. However, a relatively mild winter prevented winterkill and widespread spring rains restored soil moisture. Good spring growing conditions continued until a mid-May freeze caused considerable losses in the West Central Great Plains. The yield in Kansas, hardest hit by this freeze, was nearly 30 percent lower than in 1980, with production down 115 million bushels. Thus overall yields were down slightly from a year earlier but with a record harvested acreage of 58.5 million acres the first 2-billion bushel winter wheat crop (2.06 billion) was produced. Although the freeze prevented a record Hard Red Winter harvest, the tremendous expansion of Soft Red Winter wheat acreage, particularly in the Southeast, resulted in a banner outturn. Continued ideal growing conditions in the Pacific Northwest (PNW) again produced a record white wheat crop.

Spring wheat planting got off to an early start with considerable concern about dry soil conditions in major Durum and Other Spring Wheat growing areas. However, beneficial rains in late May and early June greatly improved prospects. Also timely summer rains in the Northcentral Plains, culminated in producing record 1981 Durum and Hard Spring crops. Average yields bounced back nearly 10 bushels for Durum and 6 bushels for Other Spring Wheat after last year's drought.

Good harvest weather in the Northern Plains also improved the quality of the crop over that of 1980 which suffered extensive sprout damage. Overall the quality of the 1981 wheat crop is higher than a year ago due to the improvement in Durum and Hard Red Spring. Soft red wheat quality was somewhat disappointing because of higher protein levels; but the quality of the white wheat crop rated the best in several years.

A number of interesting developments have occurred during the past 4 years regarding the acreage and production of wheat in the U.S.. The following table illustrates the regional changes that have occurred:

Region	Harvested Wheat			Production			Average
	Acreage						Yield
	1978	1981	%Change	1978	1981	%Change	
	---Million Acres---			---Million Bushels---			-Bu/Ac-
(1) Northeast	.8	1.5	+87.5	30.9	65.0	+110.5	40.9
(2) Southeast	1.3	6.9	+430.8	45.2	281.8	+523.5	37.8
(3) Corn Belt	3.6	7.8	+116.7	136.0	344.1	+153.0	44.1
(4) Southern Plains	20.5	28.2	+36.9	559.1	745.9	+33.4	30.1
(5) Northern Plains	23.1	28.0	+21.2	680.6	842.2	+23.7	27.6
(6) Northwest	5.5	5.9	+7.3	255.5	326.1	+27.6	50.2
(7) Southwest	1.4	2.4	+71.4	67.8	145.0	+113.9	55.3
U.S. Total	56.5	80.7	+43.8	1775.5	2749.8	+54.9	33.4

- (1) Delaware, Maryland, New Jersey, New York, Pennsylvania, West Virginia, Michigan.
- (2) Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Tennessee, Virginia.
- (3) Illinois, Indiana, Iowa, Missouri, Ohio, Wisconsin.
- (4) Colorado, Kansas, Oklahoma, Texas.
- (5) Minnesota, Montana, Nebraska, North Dakota, South Dakota, Wyoming.
- (6) Idaho, Oregon, Washington.
- (7) Arizona, California, Nevada, New Mexico, Utah.

Two Billion Bushel Export Season Within Sight

Prospects for a slight reduction in world production outside of the U.S., and increased world trade has fostered the forecast of a dramatic 1981/82 expansion in the U.S. exports (Table 1). With more than adequate supplies to meet this blooming demand, overseas shipments of U.S. wheat are projected to be a record 1.9 billion bushels (51.7 million metric tons). This level may even approach 2.0 billion bushels if crop developments in the Southern Hemisphere continue to deteriorate. The 1.9 billion bushel projection is a fourth larger than last season's record loadings and means the U.S. will be the supplier of nearly half the 1981/82 total global wheat trade.

World importers will buy nearly 70 percent of the record 1981 U.S. wheat crop. Current export commitments (outstanding grain sales plus shipments) represent nearly 60 percent of the season's total projected volume. Weekly loadings during June-September have been at a record pace and will have to continue at about 35 million bushels to season's end. The key to achieving the 390 million bushel increase in U.S. exports over last year may be in avoiding any serious logistical disruptions both here and abroad. China will likely remain our single largest customer while purchases by the Soviet Union, India, Brazil, Iran and Morocco are expected to be significantly larger.

Domestic Use Likely A Record

Domestic use in the U.S. is expected to be at a record level reflecting a continued growth in food use and a fourfold increase in wheat feeding (Table 1).

Food use of wheat (wheat ground for flour less flour exports) during the June-September period was slightly ahead of last year. The impact of relatively low stable prices and large supplies has been offset by the high cost of carrying inventory so millers and bakers have been operating "hand-to-mouth" during this period of record high interest rates. However, mill grind may soon show a rebound if price rises cause millers and bakers to replenish inventories in anticipation of further rises.

Durum grind and use is expected to be up from last year as large supplies and substantially lower prices should prompt pasta manufactures to include optimally larger portions of Durum in their product formula.

The October 1 Stocks Report confirmed the forecast that short early season feed grain supplies and the large supplies of low priced wheat during the June-September quarter would likely mean substantial expansion in wheat feeding over last year. Apparent feed disappearance for this period was about 190 million bushels, the largest ever. Because of the residual nature of computing feed use, this large disappearance may be subject to later adjustments. For this reason, the full season projected feed-use residual is estimated at 200 million bushels.

Extremely large harvesttime supplies in the Southeast and greatly depressed wheat prices encouraged the large poultry industry to substitute wheat for feed grains. But this early summer price advantage has eroded as the banner 1981 feed grain harvest became evident. With strengthening wheat prices and seasonally low feed grain prices, wheat feeding this fall and the remainder of the year will likely be curbed.

Wheat Prices Decline

The huge 1981 wheat harvest, high interest rates, lack of speculative capital in commodity markets, the general state of the economy, record feed grain production prospects and the high cost of carrying inventory have contributed to a 6 percent decline in wheat prices during the June-September

period from the same period last year. However, as projected carryover levels decline and free stocks tighten, farm prices are expected to advance to above the \$4.00 mark and may approach the lower \$4.48 reserve trigger price during the latter part of 1981/82 marketing year.

Free stocks of wheat on June 1, 1982, may be below 250 million bushels as farmer-owned reserve stocks are expected to be at or above 475 million bushels at season's end along with over 185 million bushels of wheat owned by CCC. This would be the lowest "free stocks" position since June 1, 1974, when total stocks were only 340 million bushels. This situation should result in good movement of wheat prices over the next several months. The magnitude of this situation is further intensified when the stocks position by class of wheat is reviewed. The following table illustrates this situation:

<u>Item</u>	Hard Red <u>Winter</u>	Hard Red <u>Spring</u>	Soft Red <u>Winter</u>	<u>Durum</u>	<u>White</u>	<u>Total</u>
Production	1104	259	658	182	339	2750
Carryover, June 1, 1982	382	322	30	107	67	908
Reserve Stocks	235	161	10	19	50	475
CCC Inventory	129	39	8	--	9	185
Free Stocks	18	122	12	88	8	248

Ending stocks for 1981/82 are projected to decline to near 900 million bushels, almost 100 million below last year. Wheat prices for the season are expected to range from \$3.80 to \$3.95, slightly less than last year's \$3.96 per bushel (Table 1).

1981 Program At A Glance

The 1981 program is essentially unchanged from 1980. Basic program features include:

- 1) No set-aside requirement.
- 2) Target Price - \$3.81 per bushel.
- 3) Loan Rates - \$3.20-Regular loan and \$3.50-Reserve loan.
- 4) Reserve Program - Direct entry of 1981 crop grain authorized.
(Reserve program provisions will be discussed in more detail later.)

Average prices received by farmers during the first five months of the 1981/82 marketing year (June-October) are projected to be below the target price of \$3.81, therefore, deficiency payments are expected for the first time since the 1978 crop. Official prices to date indicate a deficiency payment rate of 12 to 16 cents. Deficiency payments are equal to about \$27 million for each cent of exposure. All producers who reported their 1981 wheat acreage to the local ASCS office and filed an application for payment are eligible to receive a deficiency payment. These payments will be made shortly after December 1.

Loan activity for the 1981 crop has been heavy because of the depressed price situation. As of October 21, total quantity under loan was 280 million bushels compared to 331 million bushels for the entire 1980 crop. Total 1981-crop loan volume will likely exceed 500 million bushels, the highest since the 1977 crop. Reserve entries from the 1981 crop at 76 million bushels (as of 10/21/81) are below expectations.

Farmer-Owned Wheat Reserve Program (FOWR)

A restructured and simplified FOWR was announced on July 23. Provisions of the new FOWR are:

- Direct entry of 1981 crop wheat authorized.
- Outstanding 1980 crop loans may be placed into the new FOWR or entry can continue into Reserve III through December 31, 1981.
- Wheat Reserves, I, II and III can convert into new FOWR (Reserve IV)
Total length of reserve contract cannot exceed 5 years.
- Reserve contract is for 3 years.
- Reserve trigger price for Reserve IV is \$4.65 per bushel. Reserve grain can be marketed without penalty whenever the national 5-day moving average price reaches the \$4.65 trigger price.
- Interest at the current CCC rate will be charged for the first year of Reserve IV contracts; waived the second and third years.
- Annual storage payments of 26.5 cents per bushel are paid in advance.
- Storage earning stops and the current CCC rate at interest begins whenever a second consecutive release announcement is made.
- The call price is also \$4.65, but this provision will only be invoked under extreme emergency.
- The penalty for early redemption of reserve contracts is equal to one-half of the current CCC rate of interest from the date the contract was approved or the last date release was allowed. In addition to standard redemption values all storage payments paid must be repaid.
- The FOWR includes 1976 through 1981 crops of wheat. Reserve quantities as of October 21 were at 442 million bushels, the highest ever. The breakdown by crop year is as follows:

<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
-----Million Bushels-----					
58.5	56.4	19.8	34.4	197.0	75.9

Four different FOWR contracts exist with differing release and call levels. The applicable levels are as follows:

<u>Trigger Levels</u>	<u>Reserve I</u>	<u>Reserve II</u>	<u>Reserve III</u>	<u>Reserve IV</u>
Release	\$4.48	\$4.80	\$4.48	\$4.65
Call	\$5.60	\$5.92	\$5.60	\$4.65

Outlook For 1982 Wheat Crop

Last year's record wheat plantings (88.8 million acres) are not likely to be duplicated for the 1982 crop because of the announced 15 percent "reduced acreage" program. However, the winter wheat area has good to excellent soil

moisture conditions and this may induce producers to sow nearly as much acreage as in 1981. Wet fields and the late soybean harvest may reduce plantings in the northern soft red wheat "double cropping" region. But seedings in the Southeast will likely increase. Favorable planting conditions coupled with reduced white wheat stocks in the Far West may also mean plantings comparable to a year ago. Although spring wheat planting remains months away, prospects for weaker 1981/82 price levels and large carryover stocks of Hard Red Spring and Durum wheat may mean reduced plantings in order to meet the "reduced acreage" program requirements.

The lack of any strong crop alternative, particularly in the Plains and the PNW should tend to maintain acreage in the shortrun. This is also true in feed grain and oilseed areas where increased supplies and lower prices do not make corn and soybeans strong acreage competitors. The success and expansion of double cropping (wheat/soybeans) in 1981 will likely increase again in 1982.

So it appears the major incentive to adjust acreage downward is the "reduced acreage" program. Generally, because of the lateness of the reduced acreage program announcement, the strategy of the winter wheat producers seems to be to seed acreage already prepared and delay their participation decision until next spring. By then, the post winter crop conditions and the 1982/83 price outlook will be more clear. Therefore, one could conclude that the December Winter Wheat Seedings Report could be as high or higher than last year's 65.8 million acres.

The ultimate program provisions of the 1982 wheat crop will weigh heavily on the level of participation in the reduced acreage program. Early reactions would indicate participation will likely be well below past programs.

1982 Wheat Program - Up In The Air At This Time

The Food and Agriculture Act of 1977 expires with the 1981 crop of wheat. Therefore, Congress and the Administration have been deeply involved during the past several months hammering out new farm legislation for the next 4 years. One major element that has prolonged the legislative debate is that for the first time farm legislation is being developed under strict budget constraints. To date both the Senate and House have passed their version of a new farm bill. Many differences exist between the two bills that must now be ironed out in Conference. Such action will likely take place during the first week of November. Depending on whether an acceptable farm bill can be worked out, passage does not seem likely much before mid-November.

The following is a brief summary of the major provisions of both farm bills (Senate: S. 884 and House: H.R. 3603).

1. LOANS AND PURCHASES.

H.R. 3603 - 1982 crop at not less than \$3.55 per bushel adjusted for the 1983 through 1985 crops by the same percentage increase as is used to adjust the target price. (Based on current projections, loans would increase approximately 10 percent each year.)

S. 884 - Minimum level at not less than \$3.50 for the 1982 through 1985 crops.

2. TARGET PRICES.

H.R. 3603 - \$4.20 for the 1982 crop and adjusted by the change in a moving two-year average cost of production per acre for each of the 1983 through 1985 crops. (Based on current projections, target prices would increase approximately 10 percent each year.)

S. 884 - Minimum levels - \$4.00-1982; \$4.20-1983; \$4.40-1984; \$4.60-1985. May adjusted annually be the change in a moving two-year average cost of production per acre.

3. DISASTER PROGRAM PROVISIONS.

H.R. 3603 - Continues authority through 1985 crops except disaster program is not available in counties where FCIC is applicable.

S. 884 - Same as H.R. 3603 except the Secretary may make disaster payments if losses cause (1) an economic emergency; (2) other disaster assistance is insufficient to alleviate the loss and (3) additional assistance is needed to alleviate the economic emergency.

4. SET-ASIDE AND ACREAGE LIMITATIONS.

H.R. 3603 - Mandates a minimum 15 percent set-aside whenever the previous year's carryover exceeds 6.0 percent of that year's world consumption of wheat. Loan rates shall be increased 5 percent whenever set-aside is applicable. Producers may at their option set-aside 30 percent and in such case the loan rate shall be increased by 15 percent. Announcement must be made by not later than August 1. Limits the amount of cropland idled in summerfallow areas to not more than 60 percent. Mandates grazing and haying of set-aside acreage. Extends normal crop acreage (NCA) provisions for wheat and feed grains.

S. 884 - Secretary may impose a "reduced acreage" program whenever supplies are determined excessive. The reduced acreage percentage shall be reduced from the previous year's wheat acreage planted for harvest or may be from the previous two year average. Other adjustments are authorized. Program benefit eligibility tied to compliance with reduced acreage program.

5. LAND DIVERSION.

H.R. 3603 - Extends provisions of current law through 1985.

S. 884 - Extends provisions of current law through 1985 crop except authorizes Secretary to tie program benefits to compliance with land diversion.

Contingent upon passage of new farm legislation, the Secretary announced on September 3 his intentions to implement a 15 percent "reduced acreage" program for the 1982 crop of wheat. This action was taken to offset the effects of record supplies and depressed wheat prices.

Preliminary provisions of this program are:

- Program benefits such as loans, entry into FOWR and target price protection will be tied to participation.
- Reduced acreage must be devoted to approved conservation uses.
- Participants must reduce the 1982 wheat planted for harvest by 15 percent from an established wheat base. Generally the wheat base will be the 1981-crop wheat planted for harvest.
- Grazing of reduced acreage will be permitted except during the six principal growing months.
- Offsetting compliance will apply; but cross compliance will not.

The level of participation in the "reduced acreage" program depends on a number of factors such as final target levels, loan rates, and expected farm prices. Our initial estimates based on past program performance was that participation might be as high as 50 percent. However, we now believe this level may be more in the range of 25 to 35 percent.

TABLE 1

Wheat: Summary of Supplies, Utilization and Price 1950-1981

Item	1950-59 Ave.	1950-69 Ave.	1970-79 Ave.	1980/81	1981/82
<u>Acreage (Mil.Ac.)</u>					
Planted	65.1	56.3	65.6	80.4	88.9
Harvested	56.2	50.2	58.4	70.9	80.7
Yield/Harvested Ac. (Bu/Ac)	19.5	26.4	31.2	33.4	34.1
<u>Supply (Mil.Bu)</u>					
Production	1095	1324	1824	2370	2750
Total Supply	1962	2374	2630	3274	3743
<u>Utilization (Mil.Bu)</u>					
Domestic	630	655	781	773	932
Export	388	712	1054	1510	1900
Total	1018	1367	1835	2283	2832
Ending Stocks	944	980	795	991	908
<u>Prices (\$/bu)</u>					
Farm Price	\$1.97	\$1.54	\$2.86	\$3.96	\$3.80-3.95
Stocks/Use Ratio (%)	92.73	71.69	43.32	43.41	32.06

U.S. RICE OUTLOOK

Acreage, Yields, and Production at Record Levels

Rice production in 1981 will be at a record level for the second consecutive year. Based on October 1 estimates, production will reach 178.8 million hundredweight (5.8 million tons milled basis), 12 percent increase over the 1980 record level of 145.1 million (4.8 million tons milled basis). This production is based on record harvested acreage of 3.77 million acres and a record yield of 4788 pounds per acre.

All producing States except Texas increased plantings, but the major increases occurred in two States. Arkansas acreage increased by 17 percent to 1.52 million acres and Mississippi increased by 36 percent to 340 thousand acres.

The 4788 pound yield is up nearly 9 percent from last year and is the highest yield since the 1976 record of 4663 pounds. Yields increased in all producing States due to excellent weather conditions and varietal improvements. California yields again will be far ahead of the Southern States average. For 1981, the California yield of 6800 pounds is 54 percent greater than the Southern average yield of 4410 pounds.

Based on carry-in stocks of 16.5 million hundredweights and imports of .1 million, total rice supplies for 1981/82 will reach 195.4 million hundredweights (6.4 million tons, milled basis), 14 percent above the 1980/81 supply and a record level.

Export Demand Reduced For 1981/82

Rice exports for 1981/82 are estimated at 79.0 million hundredweight (2.6 million tons, milled basis). This level represents a 14 percent decline from 1980/81 record exports of 91.4 million hundredweights (3.0 million tons, milled basis). The decline is based on reduced exports to South Korea and the favorable crop prospects in several other key rice importing countries.

Domestic Use Steadily Increasing

Domestic food consumption and industrial use of rice in 1981/82 are estimated to reach 56.5 million hundredweight (1.86 million tons, milled basis). This represents an increase of 3.6 percent over 1980/81 domestic use, and indicates that rice use continues to expand in line with population growth. Use of rice by brewers, estimated at 11.8 million hundredweight, will recover from reduced use in 1980/81 when brewers rice was in short supply due to sizeable brown rice sales.

Ending Stocks To Soften Prices

The coincidence of a record supply and reduced exports is expected to result in a record year end carryover level of 56.4 million hundredweight (1.85 million tons, milled basis). As a result, rough rice prices are expected

to fall from last year's season average price of \$12.00 per hundredweight to a range of \$9.00-\$11.00. Prices for the first five months of this marketing year are expected to average below the 1981 target price of \$10.68 per hundredweight. As a result, deficiency payments are expected to be made to eligible producers.

Rice Outlook Workshop

A separate workshop on the rice outlook and situation has been scheduled for next month. This Rice Outlook Workshop will be held December 9th at Texas A & M University in College Station Texas. (Rudder Tower, Room 510, 8 am to 5 pm.

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I welcome the opportunity to again participate in your Conference and to comment on the food grains outlook from a Canadian point of view. Although I will direct most of my comments to wheat, we look at all of the grains together and I will include some background on feedgrains and oilseeds. You might also find it useful if I added a few words about our views of the longer-term and the current priorities in our domestic grain programs.

Excellent Growing Conditions

When I spoke to you in November, 1979, I mentioned that farmers in the Canadian West had experienced most of the problems of growing grain in the northern regions of the continent that year. In 1981, the situation was nearly reversed. Following drought conditions in the Canadian West in 1980, the winter was mild and there was limited snow. So we started the 1981 growing season with reduced prospects again. We even had serious dust storms in parts of the West that reminded older people of the 1930's. Farmers went ahead and seeded an increased acreage based on the good market opportunities that prevailed for grains. Adequate and timely rains came throughout the season and it was not excessively hot. There was very little early frost and Western farmers enjoyed one of the best harvest conditions for years. The elements were not quite as kind to Eastern farmers where excessive moisture, particularly in recent weeks, is taking its toll. A considerable amount of our corn crop is still out in the field.

Record Harvest

Canadian production of wheat and feedgrains actually reached record levels in 1981. The total wheat crop was just over 24 million tonnes, about 3% over the previous record and 27% over 1980. To place this in context, we produce about one-third as much wheat as you do. Barley production was also a record as was rye and corn. You will appreciate that our corn production, while rising steadily, is still quite small, about 3% of yours. Our rapeseed crop, which we now call Canola, was the lowest since 1976. Incidentally, we consume a lot of Canola oil and feed

considerable quantities of Canola meal, in case you are not aware that this is used for food as well as feed. I have attached a table of the 1981 production of principal crops in Canada to the text for later circulation.

Crop of Excellent Quality

Our preliminary surveys of quality show relatively high grades and protein levels despite the above average yields. We expect that more than 80% of the 1981 wheat crop will grade #1 or #2 Canadian Western Red Springs, compared with about 50% in those grades last year. The share of durum falling in the top grades is also somewhat above the 1980 levels. We had similar results for the other grains due, of course, to the good growing season and particularly the excellent harvesting conditions. The overall protein level for wheat is quite good and somewhat above the 1980 crop. I do not think that you should be too concerned about greater competition due to the size of our crop and its good quality. The buyers seem to recognize the quality characteristics and pay a fair premium for our top wheats. We will seek the best possible prices for our producers and we hope that you will do the same.

The Outlook for Canadian Exports and Carryover

Since we have a record quantity of grain supplies in Western Canada and our transportation and handling system is working quite well, the Canadian Wheat Board has established an export target for Prairie grains, oilseeds and products of about 26 million tonnes. This is some 13% over our previous record set in 1979/80 and is in line with our longer-term objective of exporting 30 million tonnes by 1985. The Board has a heavy sales program already in place and the railways and handling systems have sufficient capacity to accommodate this movement. You will recognize that the establishment of export targets in Canada is always a gamble, given the variable growing conditions and winters that we experience but the whole system seems dedicated to achieving our export targets. Again, to keep our exports in context, 26 million tonnes represents about 15% of what I understand to be the anticipated volume of exports of similar U.S. grains and products. Our export target of 30 million tonnes of grains and products by 1985 is, of course, based on the expectation that world markets will continue to expand in line with longer-term trends and is designed to maintain our share of that growing trade. You will also be aware that our production and exports are not expanding as rapidly as your own since we do not have a comparable land resource or climate.

With respect to wheat, I believe that the current USDA export estimates for Canada, about 17.5 million tonnes, are reasonable. Even at that level, we will add somewhat to carry-over stocks, increasing to about 9.5 million tonnes. We understand that stocks in the U.S., as well as in other major exporting countries, are expected to decline somewhat in this crop year. Total Canadian wheat shipments to date are running behind last year, although overall grain exports are at comparable levels. The short Thunder Bay grain handlers' strike reduced throughput there but this situation has returned to normal and car unloadings are increasing rapidly. Shipments through the West Coast have been establishing records.

Since grain reserves form an important part of your domestic grain program and do have a significant impact on the market, I should point out that the carryover of wheat in Canada as a share of utilization, including exports, is normally around 50%. In some earlier years, we held back a much greater share through our quota system. I believe that your year end stocks represent about 30% of utilization and in the case of Australia and Argentina the share is much lower. Our carryover includes sufficient grain to keep our system going from the end of the crop year until the new crop is available, which accounts for some of the differences but we, like yourselves, believe that the management of stocks represents an important element in our programs for strengthening the markets when desirable.

With respect to other grains, our exports of barley and other feedgrains will also increase this crop year but oilseeds exports will likely remain steady. The carryover of feedgrains will be somewhat higher than a year ago but not burdensome and our stocks of oilseeds will be reduced to low levels.

Looking Towards Next Year

As is our normal practice, we will be developing recommended acreages and providing market guidance to Canadian producers by March 1. We hold our Outlook Conference in early December and we are always pleased to welcome Americans who are prepared to face our climate at that time of year. Based on our current thinking, I expect that the emphasis for 1982 will be similar to 1981, although an increase in Canola acreage will be needed. Although we are optimistic that there will be a fairly steady increase in Canadian grain production through the 1980's, we expect that wheat acreage will remain at about this year's level in the coming season. The Canadian Government reduced the initial payments for Western grains delivered to the Canadian Wheat Board for this crop year, which will be a factor influencing producers' planting intentions for wheat, barley and oats.

International Outlook

Canadian estimates of the world crop situation and outlook are in line with USDA figures and those provided by the International Wheat Council. During the summer, we were not as optimistic about world wheat production and, hence, we had somewhat higher projections for trade and lower carryover figures. On the other hand, we did not anticipate such a large U.S. corn crop. It now appears that world utilization will be very close to production. There is considerable concern about softness of prices, particularly when the world supply and demand situation is not greatly different than that which prevailed in the previous crop year. It appears that prices in the international market may be reflecting the supply/demand situation within the U.S. to a greater extent than the more balanced situation in the world generally. Although wheat prices are currently lower than last year, we are optimistic that a modest recovery will occur through the winter months as the market recognizes the somewhat tighter physical situation than earlier projected.

Co-operation and Co-ordination Essential

In 1979, I suggested to this Conference that we appeared to have entered a new phase of grain production and trade with much to be gained by greater consultation and co-ordination of our programs among the major exporting countries. At that time, we were expecting that the international wheat market would exceed 85 million tonnes by the mid-1980's, depending, of course, on the weather. We agree with the USDA estimate that world wheat trade will exceed 100 million tonnes in this crop year so we are working well above our earlier projected trend line.

In Canada, we are continuing to plan on the basis of a continuation of the basic trend towards greater production and trade. The program of replacing worn out boxcars with new hoppers is proceeding, with over half of the grain fleet having been modernized. We are also rebuilding most of the basic Prairie railway branch line system. The development of a major new grain terminal in Prince Rupert on the West Coast appears assured, with a consortium of grain companies taking the initiative with Federal and Provincial assistance. We face an immediate need to expand our capacity through the Rocky Mountains and eventually to the East as well. We believe that the international market must bear a substantial part of the cost of this expansion, since it appears evident that the world will require increased shipments of grain for a number of decades.

It is recognized that there will be major fluctuations in supply and possibly demand from one year to another and that market variability may increase. It must be discouraging for farmers who respond to these longer-term trends by producing larger harvests, to watch prices edge downward as a result of their efforts and the co-operation of the weather. We believe that early International Wheat Agreements worked quite well, not so much because of the provisions that they contained, but rather because the major exporters -- the U.S.A. and Canada at that time -- closely co-ordinated their systems within the parameters established by the IWA. Other grain trading countries supported these actions in the interest of adequate production and trade.

More recent attempts to develop similar agreements with greater flexibility have not been successful. Although efforts are continuing to find alternative approaches with even more flexibility, we continue to hold the view that close co-ordination among exporting countries will work to the benefit of our grain producers and the international community. We believe that programs which provide a sound basis for production should be encouraged in the interests of exporting and importing countries and, conversely, that any programs that depress incomes to grain farmers who receive their returns from the international market, should be discouraged. Consequently, we share your concern over the use of export subsidies by the EEC, which we consider lead to reduced incomes for Canadian grain farmers. We are also concerned at practices of other exporters that appear excessively competitive in circumstances when grain prices are clearly too low in relation to costs of production.

It should be possible for the major grain producing and trading countries to focus on problems of supply and inadequate producer returns and find ways that will reduce or eliminate them. We are continuing to encourage consultations among the exporting countries for this purpose and we are hopeful that policy meetings can be organized in the near future. The Minister responsible for the Canadian Wheat Board has met with your Secretary of Agriculture and was encouraged by the Secretary's positive attitude towards continuing this dialogue. More recently, the Canadian Minister met with the French Minister of Agriculture and received a favourable response to suggestions for greater co-operation in the grain sector. Once again, I can assure you that the Canadian Government is dedicated to closer working relationships among the exporting countries and with our customers to respond to the demands and challenges of the 1980's.

Production of Principal Crops in Canada

('000 tonnes)

	<u>1980</u>	<u>1981*</u>
Winter wheat	888	1,021
Spring wheat	16,367	20,546
Durum wheat	1,943	2,792
All wheat	19,158	24,360
Barley	11,259	13,317
Oats (for grain)	3,028	3,591
Rye (for grain)	448	959
Corn (for grain)	5,434	6,136
Rapeseed	2,483	1,782
Flaxseed	465	485

Source: Statistics Canada

* September Forecast

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OUTLOOK '82

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Cow's milk production for the world's 36 major dairy countries is expected to be up less than 1 percent this year from the nearly 388 million metric tons (855 billion pounds) output of 1980. Although milk production will likely increase some 3 percent for the United States during calendar 1981 and gains of over 2 percent are expected for India, Canada, and Brazil, several important milk producing areas are experiencing difficulties. Output continues to decline in the Soviet Union and Poland as both countries suffer from feedgrain and forage problems. Also, production in New Zealand and Australia declined in 1981 as hot weather and drought seriously hurt pasture conditions and output per cow dropped. For the 10 European Community (EC) countries, which account for nearly 30 percent of world milk output, cow numbers have declined, thus total milk output appears to have nearly stabilized with less than a one percent year-to-year gain expected for both this year and next.

In 1982 we are expecting only a 1 percent rise in world milk output from year earlier levels. Even though more "normal" weather conditions are projected for the Soviet Union, New Zealand, and Australia, U.S. milk production is forecast to be about the same for the calendar year as dairy farmers adjust to reduced profitability.

Table 1. - Fluid Cow's Milk Production

<u>Major Producers</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u> (Estimate)
	Million metric tons			
EC-10	105.6	108.6	111.5	112.3
USSR	94.7	93.3	90.7	90.0
USA	55.1	56.0	58.3	60.0
Oceania (Aust./NZ)	11.7	12.3	12.4	11.9
Other countries*	109.8	112.9	114.8	116.4
TOTAL	376.9	383.1	387.7	390.6

* Includes 22 other major milk-producing countries.

BUTTER

World butter output for 1981 at 6 million metric tons is only slightly below 1980. Butter production has remained near the 6 million ton level since 1976 and prospects for 1982 show only a slight gain from this year's outturn. U.S. butter production is up sharply--an estimated 8 percent this

year--reflecting the sharp rise in raw milk available for manufacturing dairy products. With commercial use down slightly, U.S. stocks increased rapidly during the first half of 1981, with most of the surplus moving into stocks owned by the government. In April, the CCC sold 30,000 metric tons of butter to Poland. Then, in August the CCC sold 100,000 metric tons of its inventory (about one half) to the New Zealand Dairy Board. New Zealand intends to convert most of this butter into butteroil for sale on world markets, particularly for recombining with nonfat dry milk to make a fluid milk product. The U.S. butter will be shipped from U.S. warehouses over a 10-month period ending in mid-1982.

Year end stocks of butter for the United States and New Zealand have been adjusted to reflect 40,000 metric tons being shipped during calendar 1981. For 1982 it is assumed that the butter will have been shipped and converted by New Zealand into butteroil by year's end. Also, U.S. stocks for the years ending 1981 and 1982 reflect the amount of butter shipped to Poland in both 1981 and 1982 from last spring's sale.

The following table highlights that world butter stocks rose sharply in 1981 largely because of the jump in U.S. government stocks. On the other hand, EC stocks continued to decline in both 1980 and 1981. In mid-1981 EC stocks were at their lowest level in several year's; however, some buildup is expected during the last half of this year. Total year ending butter stocks, for all countries, are projected to continue near 1981 levels next year.

Table 2. - Year End Stocks of Butter

<u>Country</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u> (Estimate)	<u>1982</u> (Forecast)
	Thousand metric tons				
EC-10	568	493	350	301	330
USA	94	81	138	195	207
Oceania (Aust./NZ)	83	88	73	106	61
Non-EC W. Europe	25	20	26	23	21
Japan	21	35	42	45	47
Canada	28	20	15	14	17
Other	20	26	24	23	24
TOTAL	839	763	668	707	707

The EC and New Zealand are the world's leading exporters of butter. Excluding intra-EC shipments, these two major exporters of dairy products account for around 85 percent of the world butter trade. The EC subsidizes butter exports under its dairy support system to limit excessive buildup in its intervention (government-owned) stocks. The most recent EC export subsidy is \$1,155 per metric ton or \$0.52 per pound. World butter prices are currently around \$2,400 per metric ton (\$1.09/lb.) for unsalted sweet butter, 82 percent butterfat, f.o.b. major European ports. U.S. support prices for butter, lightly salted 80 percent butterfat, at New York City are \$3,350 per metric ton or \$1.52 per pound, well above world price levels. Of course, if the United States subsidized at 52 cents per pound as does the EC, we would be very competitive internationally. New Zealand, on the other

hand, is able to compete on world dairy product markets because its milk production costs are very low. New Zealanders depend mostly on grazing their cattle and the mild weather there limits other fixed cost requirements.

NFDM

World production of nonfat dry milk (NFDM) powder this year is estimated at nearly 4.2 million metric tons, only slightly above 1980 output. Next year, little change from 1982 production is anticipated.

For all of 1981, U.S. NFDM powder production, like butter, is up by some 8 percent, with most of the increase accumulating in government inventories. Manufacture of skim milk powder was also up sharply in Brazil as that country registered a gain in milk output and a weakening in domestic demand for fluid milk. For the EC-10, January-June output was off about 6 percent from year earlier levels but production was expected to catch up and stock levels by year's end may be close to a year ago. For Poland and the USSR, NFDM production will likely be down significantly in 1981.

World stocks of NFDM at the end of 1981 are likely to be up sharply from ending 1980 levels and some additional gain is likely in 1982. U.S. stocks even though they reflect large CCC sales to Mexico and Poland this year are expected to exceed 400 thousand metric tons by the end of this year and are approaching 45 percent of world inventories.

Table 3. - Year End Stocks of Nonfat Dry Milk (NFDM)

<u>Country</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u> (Estimate)	<u>1982</u> (Forecast)
	Thousand metric tons				
EC-10	797	296	265	262	295
USA	265	220	266	408	404
Oceania (Aust./NZ)	56	88	72	57	53
Non-EC W. Europe	38	49	36	32	29
Japan	55	80	67	22	20
Canada	42	11	17	18	18
Mexico	15	10	54	72	80
Other	72	48	62	54	55
TOTAL	1,340	802	839	925	954

The European Community, also plagued by large inventories during the mid-70's (1972-78), has sharply reduced their stock levels through both domestic use and exports outside the Community. Export subsidies on nonfat dry milk being paid by the EC are \$410 per metric ton or \$0.19 per pound.

World skim milk powder prices are about \$1,100 per metric ton (\$0.50/lb.) f.o.b. European ports. U.S. support prices for unfortified dried skim milk are currently \$2,072 per metric ton (\$0.94/lb.) also well above world price levels.

The European Community and New Zealand together account for nearly three-fourths of skim milk powder exports to third countries.

CHEESE

World cheese output in 1981 is estimated at 8.4 million metric tons (excluding cottage cheese), up about 2 percent from last year. Although the 2 percent gain continues the growth in cheese manufacture apparent over the past several years, the gain in production this year is not as dynamic as the 4 percent annual increase registered in 1978, 1979, and 1980. Cheese production is up about 7 percent in the United States this year, 3 percent in the European Community, and over 2 percent in the other non-EC Western European countries and Canada. However, it appears that cheese output will show some declines in Argentina and Brazil as well as Australia, New Zealand, Poland, and the USSR.

The 1982 outlook is for only a 1 percent rise in cheese manufacture. EC production is projected to rise 2 percent and Oceania should recover from its weather related problems.

World stock levels of cheese by the end of December may near 1.3 million metric tons, up 11 percent from the end of 1980. A similar rise is projected for next year. The jump in both 1981 and 1982 can largely be attributed to the rapid growth in U.S. stock levels. If no significant government sales for export occur and stocks grow as anticipated next year, this country could also assume the unenviable position of holding 45 percent of the world cheese stocks.

Table 4. - Year End Stocks of Cheese

<u>Country</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u> (Estimate)	<u>1982</u> (Forecast)
	Thousand metric tons				
EC-10	475	496	506	458	453
USA	207	232	313	492	650
Oceania (Aust./NZ)	50	63	81	67	62
Non-EC W. Europe	142	148	142	139	138
Canada	42	52	61	67	64
Argentina	25	28	22	24	25
Other	30	31	27	29	29
TOTAL	971	1,050	1,152	1,276	1,421

The list of major cheese exporters is of course a bit larger than for butter and nonfat dry milk. The EC (excluding intra-EC shipments) will account for 45 percent of world trade in cheeses this year, followed by the non-EC Western European countries with 20 percent, Oceania with 15 percent, and East Germany with 12 percent.

EC export subsidies on cheese vary by type, but for Emmenthaler, a major export cheese, the present subsidy is about \$1,108 per metric ton (\$0.50 per pound) for non-U.S. destinations. For cheddar cheese the subsidy is \$1,030 per ton (\$0.46 per pound) for non-U.S. destinations.

The EC export subsidy on U.S. bound Cheddar cheese is \$502 per metric ton (\$0.23 per pound).

The world price on cheddar cheese ranges between \$1,300-2,000 per metric ton, depending on destination, type, etc. The U.S. support price for 40 pound blocks of cheddar cheese is \$3,075 per metric ton or \$1.395 per pound, which effectively excludes this country from competing on world markets.

CASEIN

Most of the world's supply of casein is manufactured in only 9 countries, with New Zealand, France, and Poland accounting for over one-half of the 9-country total. Our estimate for 1981 world casein production is around 190 thousand metric tons, down 8 percent from 1980's output. At this point, it appears casein manufacture next year may continue near the 190 thousand ton level. The United States does not produce casein because it is cheaper to purchase casein at the relatively low world market price. During 1980 we brought in some 69 thousand metric tons or one-third of last year's world casein output. U.S. imports this year are down sharply and through August were some 20 percent below January-August of 1980.

New Zealand's casein output for 1981 was significantly lower, reflecting in part the drop in milk production. Last year New Zealand exported over one-half of its casein output to the United States (about 35 thousand metric tons). For the first 8 months of 1981 U.S. imports of casein from New Zealand were nearly one-fourth below the comparable months of 1980.

The European Community subsidizes the manufacture of casein. In response to rising casein prices in world markets and budgetary problems, the EC reduced its casein aid during the spring of 1980. The drop in the EC subsidy has helped curtail casein production in both France and West Germany this year and those countries are not expected to expand output in 1982. The EC subsidy on casein manufacture is still significant at about \$2,100 per metric ton or \$0.95 per pound.

Casein prices currently are around \$3,400 to \$3,500 per metric ton (\$1.55-\$1.60 per pound) delivered to the United States.

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A year of uncertainty for the dairy industry characterizes 1981. This follows three years when support prices were at 80 percent of parity with semiannual adjustments--as mandated in the Food and Agriculture Act of 1977. Recall that early this year the Administration requested, and Congress approved, legislation to forego the April 1, 1981 (semi-annual) adjustment in support prices. Thus, the support price was held at \$13.10 per cwt. for milk at the annual average milkfat content of 3.67 percent (\$12.80 at 3.5 percent fat).

For the past several months, formulation of the new farm bill has been underway on Capitol Hill. As these remarks are being prepared (during the last week of October), it is still uncertain as to what the support level will be--not only for the coming year, but also for the next 4 years. Nevertheless, I will attempt to "sort it out" in the next few minutes.

Legislative Update

Because the 1977 Act expired on September 30, 1981, the support level was raised (as required) to 75 percent of parity on October 1. Subsequent special legislation "rolled back" that increase to the pre-October 1 level of \$13.10 on October 20. This special legislation expires on November 15.

The Senate and House have both passed legislation to hold the milk support price at \$13.10 through the 1981/82 marketing year ending September 30, 1982. But, that is where the agreement ends. In later years, the Senate bill (and the Administration position) would require a support level of between 70 and 90 percent of parity--adjusted annually. However, if CCC net expenditures are expected to exceed \$750 million in the upcoming marketing year, no annual adjustment would be required. This would allow the Secretary to hold the support price at the current level until production and consumption are brought into better balance and program costs are reduced. At no time, however, would the support price be lower than the current \$13.10.

The House version would require a 72.5 percent support level in marketing year 1982/83. Beginning in October 1983, a support level of 75 to 90 percent of parity, adjusted annually, would be required. However, if CCC purchases are expected to exceed 3.5 billion pounds (milk equivalent) during the marketing year, the support level could be set as low as 70 percent of parity.

Differences in the two bills are now "being resolved" in a Senate-House conference committee, so either version--or some combination--could emerge as a final bill. In the absence of new legislation, the support level would revert to 75 percent of parity as required in the Budget Reconciliation Act enacted last summer, and the current support price would again be raised to \$13.49 (\$13.18 at 3.5 percent fat).

The dairy outlook which follows assumes that new farm legislation will be enacted--and that the legislation will be similar to the Senate bill (i.e., a support price of \$13.10 for all of calendar 1982). Even this outlook is clouded by dairy farmer's perception of the longer run provisions of the program.

Feed Prices Down, Will be Below a Year Earlier

The decline in feed ingredient prices this summer was reflected in lower dairy feed prices. The price of 16 percent protein dairy ration was \$185 per ton during September, down \$3 from a year ago and \$15 below May. This decline, coupled with a fairly stable farm milk price, has led to some improvement in the milk-feed price ratio. This ratio, at 1.43 in August and 1.48 in September, was above year-earlier levels for the first time since July 1980 and was up from 1.35 in May.

With the record crops currently being harvested, feed prices likely will trail year-earlier levels at least through the first half of 1982--and possibly through the first three quarters. This, coupled with only small gains in farm milk prices, will leave the milk-feed ratio throughout the first half of next year above the year-earlier average of 138.5.

Milk Production Continues to Expand

The expansion in milk production, which began in mid-1979, has continued thus far in 1981. Production in September (the last month for which data are available) was 2.8 percent above a year earlier, and I currently expect production for the calendar year to average about 3 percent above 1980's record 128.4 billion pounds. This 3 percent gain will result from about 0.7 percent more milk cows and a gain of slightly over 2 percent in milk production per cow.

The continued increase in milk cow numbers relative to a year earlier has been possible because of the large number of replacement heifers available to enter the milking herd. In addition, lower cull cow prices throughout the year may have led to a reduced culling rate. Finally, relatively favorable income conditions for dairying, compared with other farm enterprises and off-farm employment opportunities, have likely contributed to the increase in cow numbers. September cow numbers stood at 10.929 million, the largest total since September 1977 and 81,000 more than a year ago.

Output per cow has continued to increase, even with relatively flat feeding rates. Many of the genetically improved heifers brought into the herd at the beginning of, and during, the expansion have reached their more productive lactations. Output per cow during July-September averaged 1.9 percent more than a year earlier.

In 1982, I look for the beginning of some adjustment in milk production--although the timing is uncertain. Basically, the expansion is expected to end during the year as support prices remain unchanged throughout the year. Farm milk prices, which I will discuss in more detail in a few minutes, may only increase 1 to 2 percent over 1981--with most of that gain occurring in the second half of the year if production adjustments occur. Milk-feed price relationships will still be favorable, but gains in output per cow may slow as older cows are culled from the herd and are replaced by first-lactation heifers. However, as these heifers move to later lactations, gains in output per cow could again

pick up. The culling rate may accelerate during the second half of the year, with the rate dependent on development of next year's feed crop and the financial condition of individual farmers. Returns over concentrate costs will improve over 1981, but in real terms (adjusted for inflation) they will decline. An improving general economy during the second half may provide more attractive off-farm alternatives for some dairy farmers.

Under the conditions described above, total milk production in 1982 may be about the same as 1981's record production, with gains in the first half of the year possibly offsetting somewhat lower production later in the year. However, production could continue to expand during the second half if the economy does not strengthen as expected, feed prices remain favorable, alternatives to dairying remain unattractive, or if long-run legislation more favorable to dairy farmers is enacted.

Small Price Increases Likely in 1982

During the first 9 months of 1981, manufacturing grade milk prices again failed to reach the \$13.10 support price (at 3.67 percent fat; \$12.80 at 3.5 percent fat) established on October 1, 1980. After adjusting for fat content, manufacturing grade milk prices averaged about 35 cents under the support level, with September's price about 45 cents under. This shortfall from support can be attributed to reduced competition among manufacturers because of the excess supplies of milk and weak demand for dairy products that have continued in 1981. The oversupply situation has been reflected in the price received by farmers for all milk. In September, the all-milk price was \$13.70 per 100 pounds, up less than 4 percent from a year earlier, compared with 8 to 10 percent gains early this year. The 30-cent seasonal price increase from June to September compares with a 70-cent increase during the comparable period in 1980.

The all-milk price likely will average about \$13.75 for all of 1981, up about 6 percent from 1980. For all of 1982, farm milk prices may only increase by 1 to 2 percent from 1981. First-half prices will be about the same as a year earlier as excess supplies persist. If production adjustments occur during the second half and the general economy improves, prices would likely move above year-earlier levels.

With no increase in the support price last April and continued large supplies, wholesale prices of dairy products have been relatively flat throughout 1981. In September, the Bureau of Labor Statistics (BLS) index of wholesale dairy prices stood at 246.0 (1967 = 100), up 5 percent from a year earlier--but up only 0.5 percent from both January and May. Wholesale prices likely will remain relatively stable through the first half of 1982, then increase later in the year if the economy improves, demand picks up, and production slows.

Retail price gains, relative to year-earlier levels, have slowed throughout 1981. During September, the BLS index of retail dairy prices stood at 244.3 (1967=100), up 6 percent from a year ago, but up less than 2 percent from the first of the year. For the year, retail prices likely will average about 7.5 percent above 1980. In 1982, retail dairy prices are expected to rise again, but the rate of gain is expected to slow and average only around 3 to 5 percent higher than in 1981. Farm-to-retail marketing costs will contribute to the increase and the retail price pattern during the year will likely follow farm and wholesale price movements.

Commercial Use

Commercial disappearance of all milk and dairy products during the first 8 months of 1981 was up only 0.2 percent from year-earlier levels on a milk equivalent basis. Through August, increased sales of cheese outweighed lower commercial use of butter and ice cream. Stronger retail prices, relative to a year-earlier, and a weak general economy likely precluded larger gains in commercial use.

Fluid use of milk in 1980 was down 1.9 billion pounds from 10 years earlier. Fluid use accounted for about 40 percent of the total market supply in 1980, compared with about 46 percent in 1970. Through July, sales of fluid milk products were down less than 1/2 percent from year-earlier levels, as increased sales of low-fat products failed to offset continued declines in whole milk sales.

Increased sales of dairy products may result from the current oversupply situation as relatively stable farm and wholesale prices occur, and consumers face only small increases in retail prices. Commercial use of dairy products during the fourth quarter of this year may increase about 1 percent from 1980 levels. First quarter 1981 use was weak, so more normal sales levels in January-March 1982 will start the year well above 1981. Following two years of relatively weak dairy product sales, use in 1982 may rise around 2 percent from 1981 levels. However, this would still be only 1.5 percent above the 1979 level. Such an increase would result from relatively favorable retail prices during the first half of 1982, and an improving general economy and consumer income picture during the second half of the year.

Commercial Stocks

Commercial stocks of dairy products this summer were below year-earlier levels. Industry holdings of milkfat were down 5 percent from last year on September 1, while stocks of solids-not-fat were about 6 percent less. The decline in stock levels held by the industry occurred as the industry moved large quantities to CCC this summer, because of heavy production, sluggish sales, and high storage costs. With no increase in the support price expected on October 1, the industry did not have much incentive to hold stocks. Accordingly, commercial butter stocks on September 30, 1981, were down a fourth from a year-earlier and were the lowest on that date since 1978. Industry stocks of American cheese on that date were also the lowest since 1978, and were 13 percent below a year earlier.

Industry holdings of dairy products will likely remain relatively tight through early 1982. If interest rates decline and sales strengthen as expected, commercial stock levels would likely be rebuilt during the flush milk production period next spring.

USDA Purchases Large

Purchases under the price support program by USDA during the first 9 months of 1981, on a milk equivalent fat basis, totaled 11.2 billion pounds, compared with 7.4 billion during the same period of 1980--and were about 11 percent of estimated farm marketings of all milk. Through September, butter removals were 307 million pounds, compared with 208 million a year earlier. American cheese purchases totaled 490 million pounds compared with 307 million last year, while

purchases of nonfat dry milk were 677 million pounds vs. 524 million. In addition, the purchase picture has not changed yet--during October, USDA removed all three products from the market in amounts greater than in 1980. This is not surprising however, since supplies remain large and products manufactured during the first 20 days of October could be sold to CCC during the month at the temporarily higher purchase prices noted earlier. Purchases of all three products likely will continue heavy in 1982--although purchases will slow late in the year if production adjustments occur as expected.

Table 1--Dairy Summary, 1979-1981

Item	Unit	1979	1980	1981	Percent change :1980-1981
			Annual 1/		
Milk production	Bil. lb.	123.4	128.4	132.3	+3.0
Milk per cow	Lb.	11,488	11,875	12,145	+2.3
Number of cows	Thou.	10,743	10,815	10,895	+0.7
Milk prices received by farmers	Dol./cwt.	12.00	13.00	13.75	+5.8
Manufacturing grade	do	11.10	12.00	12.80	+6.7
Cash receipts	Mil. dol.	14,659	16,598	18,075	+8.9
Value of dairy returns	Dol./cwt.	6.68	7.42	8.00	+7.8
Milk-feed price ratio	Lb.	1.54	1.47	1.42	-3.4
Utility cow prices, Omaha	Dol./cwt.	50.10	45.73	43.00	-6.0
			January-August		
Wholesale prices:					
Butter (Chicago, Grade A)	Ct./lb.	119.1	135.6	147.5	+8.8
American cheese (Wisconsin assembling points, 40-lb. blocks)	do.	121.8	129.7	139.0	+7.2
Nonfat dry milk (manufacturers' average)	do.	78.46	86.82	93.81	+8.1
Dairy products (BLS)	1967=100	207.4	226.6	245.2	+8.2
USDA net removals:					
Butter	Mil. lb.	56.3	206.9	300.2	+45.1
American cheese	do.	12.1	288.3	461.2	+60.0
Nonfat dry milk	do.	177.2	490.3	622.7	+27.0
Evaporated milk	do.	11.7	10.9	13.0	+19.3
Milk equivalent	do.	1,308	7,144	10,783	+50.9
Retail prices (BLS): 2/					
All foods	1967=100	232.2	250.1	273.0	+9.2
Dairy products	1967=100	203.4	224.0	243.0	+8.5
Manufactured products output:					
Butter	Mil. lb.	686.3	788.5	846.9	+7.4
American cheese	do.	1,510.6	1,626.7	1,790.0	+10.0
Other cheese	do.	1,009.5	1,035.6	1,059.6	+2.3
Nonfat dry milk	do.	666.3	851.9	923.0	+8.3
Canned milk	do.	556.3	506.3	506.0	-.1
Cottage cheese	do.	577.9	568.1	530.4	-6.6
Ice cream	Mil. gal.	566.3	579.0	576.8	-.4
Ice milk	do.	214.8	210.6	209.3	-.6
Imports of dairy products:					
Total milk equivalent	Mil. lb.	1,230	1,022	1,267	+24.0
Commerical disappearance:					
Total milk	Mil. lb.	79,702	78,633	78,789	+0.2
Butter	do.	590.0	563.7	545.5	-3.2
American cheese	do.	1,397.6	1,329.5	1,348.8	+1.5
Other cheese	do.	1,106.8	1,124.4	1,169.7	+4.0
Canned milk	do.	483.4	440.6	449.2	+2.0
Nonfat dry milk	do.	420.7	349.3	282.8	-19.0
Cottage cheese	do.	577.9	568.1	530.4	-6.6
Ice cream	Mil. gal.	566.3	579.0	576.8	-.4
Ice milk	do.	214.8	210.6	209.3	-.6
Average daily sales in urban markets:					
Fluid whole milk					-3.7
Fluid low-fat milk					+4.1
Cream and cream mixtures 3/					+1.6
Total fluid products					-.4

1/ 1981 estimated. 2/ For all urban consumers starting January 1978. 3/ January-July. -157-

E. Linwood Tipton, Milk Industry Foundation, International
Association of Ice Cream Manufacturers

1982 Agricultural Outlook Conference, Session #9
Washington, D.C.

For Release: Tuesday, November 3, 1981



I find myself in a curious position this morning. I'm very much in agreement with most of Mr. Shaw's comments, however, we have reached quite different conclusions about milk production and consumption during 1982. At MIF we believe U.S. milk production will exceed 1981's record levels by about 2 percent and that consumption will change very little. This is almost the reverse of the USDA's current estimates for no change in milk production and a 2 to 2½ percent increase in consumption.

If the USDA is right and we are wrong, this year's CCC's budget costs would be reduced substantially from last year's. However, if we are right, which I obviously think is more probable, and the USDA is wrong, it could make a tremendous difference in next year's budget costs for the milk price support program. The difference between USDA's estimate and ours amounts to about \$1 billion.

Milk Production

We estimate that next year U.S. milk production will continue to climb, but at a decreasing rate. For the year we expect a 2 percent increase, compared to 3 percent this year.

Estimates of total milk production are really the result of two other estimates---the number of milk cows and milk production per cow.

After decades of decline, the number of cows being milked turned around in 1980 and continued to increase in 1981. The increases during 1980 and 81 were slightly less than 1 percent. We expect the rate of increase to be only ½ percent during 1982, but nevertheless, an increase.

The continued increase in milk cows seems likely based on the relationship of milk and beef prices, and most importantly, the number of replacement stock on hand. As of July 1 milk cow replacements were nearly 43 percent of the milking herd, an all-time high, and 3 percentage points over last year. Replacements have been increasing steadily during the last 10 years and are way up from the historic 31 to 32 percent of the milking herd level which prevailed until about 1973. Even with no increase in milk support prices, the milk/beef price ratio is expected to remain favorable to milk. This will mean lower culling and a continued enlargement of the milking herd.

Milk production per cow, the other component of our total production estimate, is likely to be about 1½ percent higher than last year. This is a fairly moderate increase when compared to the 3.4 percent jump in 1980 and the 2.3 percent increase in 1981. Even with no increase in the milk support price during 1982, the milk/feed ratio is most likely to remain favorable to high feeding levels.

The combined effect of a ½ percent increase in milk cow numbers and a 1½ percent increase in production per cow, will result in an increase in milk production of about 2 percent next year.

A major contributor to the continued increase in milk production is the fact that milk production costs, if they increased at all, only increased slightly this year. Given the USDA's expected decrease in feed costs, we do not believe milk production costs will increase much this year either. However, there will probably be some increase. This should be sufficient, when combined with flat milk prices, to begin a slow adjustment to the employment of resources in milk production, but the real effect is not likely to manifest itself in lower milk production until 1983 or later.

It should be noted that a major increase in feed costs or run up in beef prices could cause a much more rapid change in milk production. However, we do not expect either to occur in 1982.

Consumption

I have always considered myself an optimist, but try as I might, I couldn't bring myself to the high levels of optimism required to go along with the USDA's estimated 2 to 2½ percent increase in commercial milk consumption. In fact we believe that 1982 sales will remain at about the same levels as prevailed in 1981.

We see very little change in consumption of any individual product line, except a possible 3 percent increase in cheese sales. Fluid milk sales are expected to decline about ½ percent.

Although milk support prices will not be increasing and the change in milk prices should be less than the general rate of inflation, it is significant to note that sugar prices, a major component of many competing beverages, have declined substantially from last year's very high levels. Prices of other traditional juice beverages are not expected to increase as much as inflation either. Also, and probably the most significant factor, is a substantial reduction in sales through the school milk program. We believe this could be down as much as 15 to 20 percent and could account for about a 1 percent decline in the sales of fluid milk nationwide.

Demand for a few products will remain strong, but they use a relatively small portion of the total milk supply. Among these are yogurt, sour cream's dips and dressings, flavored milks, milk shakes,

and other specialty products. Cottage cheese and ice cream product sales are likely to decline slightly. Butter will probably be unchanged and cheese consumption may increase by about 3 percent. This scenario would provide an overall increase in commercial consumption of dairy products of about 0.3 percent.

Budget Costs

Here is where the difference in our estimates and those of the USDA really become apparent. USDA's estimate would result in a decline in CCC purchases of dairy products. Our estimate would result in a further increase to the already high levels. The CCC, which bought 12.5 billion pounds of milk equivalent during the 1980-81 marketing year, is likely to buy 15 billion pounds this marketing year. This would result in a budget cost of about \$2½ billion.

I hope we're wrong, but that's the way we see it today, November 3, 1981. Thank you!

Janice Peskin, Bureau of Economic Analysis, U.S. Department of Commerce*

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For many women, homemaking is their full-time job and lifetime occupation. For many other women and men with paid jobs in the marketplace, homemaking is a secondary, but still important, job. Yet, official government statistics do not recognize homemakers as "workers" nor the value of unpaid work in the home as a component of national production.

The importance of household work has long been recognized by home economists, who have pioneered in the collection and study of data on time devoted to household work. This paper references only a few of the many studies of household work undertaken by home economists. Recently other economists have shown an expanded interest in household work and its value. In mid-1978, the Bureau of Economic Analysis, U. S. Department of Commerce, initiated a program to measure nonmarket activities like household work and the value provided by services of consumer durables. The Bureau of Economic Analysis develops and publishes GNP statistics, and the estimates of nonmarket activities developed in the new program were to be published in order that users of GNP statistics could formulate alternative measures of national income and production. Unfortunately, because of recent budget cuts the program is being phased out.

However, preliminary estimates of the value of household work have been completed and are presented in this paper. First, the paper discusses the data and techniques used to measure the value of household work. Then estimates of the per person and aggregate values of household work in 1976 are presented. Finally, there is a brief discussion of possible changes in the value of household work since 1976.

MEASUREMENT OF THE VALUE OF HOUSEHOLD WORK

The preliminary estimates of the value of household work developed at the Bureau of Economic Analysis are the product of reported hours of household work and an imputed hourly value. Reported hours are based on a survey of time use of U.S. households in 1975-76, conducted by the Survey Research Center (SRC) of the University of Michigan (see Juster (5)). This survey provides nationally reliable estimates of time use for the civilian noninstitutional population 18 years of age and older. It was important in our work to use a time use survey that was nationally reliable in order that estimates

*The views expressed are the author's own and do not necessarily reflect those of the Bureau of Economic Analysis or the Department of Commerce.

of the value of household work for the entire U.S. population could be developed and used in conjunction with GNP.

In the SRC survey, respondents reported activities for the previous day in a diary format, and these reported time uses were categorized into various uses of time by SRC researchers. Four separate time diaries for different days of the week were collected from each household between October 1975 and September 1976 and these were used to create a profile of time use in a typical (synthetic) week, consisting of at least a Saturday, a Sunday, and one weekday. Estimates presented here are based on the synthetic week data for the 1,391 respondents and spouses for whom data were complete. To calculate aggregate hours and values, average hours from the survey are multiplied by the number of women and men 18 years of age or older in the civilian noninstitutional population.

From the many uses of time or activities reported in the SRC survey, household work activities must be isolated. Two criteria are used to isolate household work activities: (1) the activities result in the production of a good or service that could be purchased in the market; and (2) the activities could be accomplished by a "third person" with no diminution of their "final utility" to household members. The time use activities from the SRC survey that are defined as household work are shown below:

Meal preparation: Meal preparation

Meal cleanup: Meal cleanup

Cleaning and gardening: Indoor cleaning; outdoor cleaning; gardening and pet care; domestic crafts

Laundry: Laundry

Home repairs and hobbies: Repairs, maintenance, home improvements; hobbies such as woodworking

Child care and instruction: Time spent with children in: baby care; child care; reading and talking; indoor play; outdoor play; travel; instruction and help with homework; babysitting (for others without pay)

Shopping and other: Everyday shopping; shopping for government and financial services; shopping for repair and other services; shopping for house (apartment) and other durable goods; errands; travel to obtain goods and services; paying bills; recordkeeping; painting and writing; medical care of children, self, and adults in household; help and care of others; time with volunteer and helping organizations

The definition of household work that we use is similar to the one used in the 1977-78 interstate time use study funded by the U.S. Department of Agriculture (see Goebel (2)). However, in our definition we include (1) time spent in hobbies (e.g., woodworking) that produce goods and (2) time spent in volunteer work.^{1/} The SRC estimates (excluding (1) and some of (2)) show daily household work hours of about 6.1 for women and 2.0 for men in two-parent, two-child families. The results we have seen from the interstate study show daily household work hours ranging from 6.6 to 7.6 for women and from 1.6 to 2.4 for men in two-parent, two-child families. The lower SRC estimate for women is due in part to the presence of fewer families with a child aged 1 year or less in the SRC sample. Exact comparisons between the SRC and interstate estimates cannot be made at this time because the interstate estimates are not weighted to reflect State populations.

Having defined household work hours, the hours must then be valued. In the estimates that are discussed later, hours are valued by the wage rates of market (paid) workers who perform similar tasks. We call this valuation technique "specialist cost" because each type of household work (e.g., meal preparation or cleaning) is valued by the wage rates of specialists (e.g., cooks or cleaners). Consequently, the hourly value of household work varies by type of work (see table 1). However, it does not vary across women and men in any given type of work.

There is considerable uncertainty associated with the measurement and valuation of household work. Three problems are important. First, the efficiency of the household worker may be greater or less than that of the market worker and/or the product may be of better or poorer quality. As a result, the value of the household work may be understated or overstated. Second, there is considerable "joint production" in household work. For example, if a woman is cooking and talking to children at the same time, only one activity is reported as the primary time use when in fact there are two products: a cooked meal and cared-for or educated children. Consequently, the product of household work is understated. Third, the value of the product of household work is understated relative to the market cost of the product. This follows because only labor costs in the form of market wages are used to value the household work whereas market costs include expenses and profits in addition to wages. For example, the market cost of a plumbing job includes rent on space, profits, and so on of the plumbing establishment, as well as the wages paid to the plumber. On balance, it is uncertain whether the value of household work is understated or overstated. But the above problems indicate that it is understated unless household workers perform less efficiently or do lower quality work than market workers.

1. Some types of volunteer work cannot be separated from household work in the SRC data. Moreover, the value of volunteer work should be added to GNP along with the value of unpaid work in the home, hence its inclusion in our estimates.

Because of this uncertainty over valuation, we have developed a range of estimates using alternative valuation techniques. In addition to the specialist cost technique, the alternatives include the housekeeper cost technique, which values all hours of household work by the compensation rate of private household workers, and opportunity cost techniques, which value hours by the compensation rate the person doing the household work could have earned by working an extra hour in the market. We have used three alternative opportunity cost techniques: (1) gross compensation, which can be interpreted as the social opportunity cost of the household work; (2) after-tax compensation, which adjusts for Federal and State marginal income tax rates; and (3) net compensation, which adjusts for taxes but also for commuting and for child care expenses. Techniques (2) and (3) are estimates of private opportunity costs. As shown in the next section, the alternatives result in values of household work that bracket specialist cost values.

THE VALUE OF HOUSEHOLD WORK IN 1976

In 1976, the value of household work of adults in the United States totaled \$752.4 billion, or 44 percent of GNP, based on the specialist cost valuation technique. Alternative valuations ranged from \$540.0 billion to \$1,015.4 billion (see table 2). For the average adult the housekeeper cost valuation was 28 percent less than the specialist cost valuation. The valuation based on gross compensation was 35 percent higher, that based on after-tax compensation was 15 percent higher, and that based on net compensation was almost identical with the specialist cost valuation. (These comparative patterns are quite different for women than for men because women's market wage (compensation) rates, and consequently their opportunity costs, are lower than men's.) The estimates emphasized in the remainder of this paper are based on the specialist cost valuation technique.

Women are the principal household workers, as shown in table 3. In 1976, they accounted for 68.4 percent of the total value of household work. For the average woman, household work totaled 1,756 hours a year or 33.8 hours a week. The value of these work hours was \$6,694 a year.

Women continue to specialize in household work despite their increased participation in the labor force. Of the average woman's total weekly work hours of 51.4, paid market work and related commuting accounted for 17.7 hours as compared to the 33.8 hours of work in the home.

In contrast, men specialize in paid market work. Of the average man's total weekly work hours of 50.0, paid market work and related commuting accounted for 34.9 hours as compared to 15.1 hours of work in the home. Nonetheless, men's work in the home is not insignificant. In 1976, for the average man its value was \$3,475.

Type of Household Work

The activities that make up household work are extremely varied, ranging from the rather mechanical task of meal cleanup to the more sophisticated tasks of financial management, child instruction, and home repair. For women,

most activities absorbed significant amounts of time in 1976 (see table 2; for more analysis see Walker and Woods (14)). The three most time-consuming activities were meal preparation, cleaning and gardening, and shopping and other. Each absorbed more than 7 hours a week; together they totaled 24.2 hours a week, almost three-quarters of all household work hours. Child care and instruction accounted for another 4.1 hours a week. It should be noted that child care hours include only hours in which child care is the primary activity. Many more hours are spent in contact with children--for example, taking children shopping or talking to them while cooking or cleaning--but these hours are usually reported as other activities. Meal cleanup and laundry each accounted for 2.4 hours a week and home repairs and hobbies for only .7 hours a week. The average annual value of each type of women's household work ranged from \$1,961 for shopping and other to \$227 for home repairs and hobbies; the aggregate annual value for all women ranged from \$150.9 billion to \$17.5 billion, respectively.

For men, weekly hours averaged 5.5 in shopping and other, 3.7 in cleaning and gardening, 2.8 in home repairs and hobbies, 1.6 in meal preparation, 1.1 in child care and instruction, .4 in meal cleanup, and .1 in laundry. The average annual value of each type of men's work ranged from \$1,322 for shopping and other to \$23 for laundry; the aggregate annual value for all men ranged from \$90.2 billion to \$1.6 billion, respectively. Clearly, men and women specialize in the types of household work that they do. Men accounted for 77.7 percent of the value of home repairs and hobbies. Women accounted for 95.7 percent of the value of laundry work, more than 80.0 percent of the values of meal preparation, meal cleanup, and child care and instruction, and a reduced 62.6 percent of the value of shopping and other.

Variations in the Value of Household Work Across Women

The average value of household work masks many variations across women, depending, for example, on their employment status or on the number of their children. This section of the paper presents and discusses estimates of the average value of women's household work in 1976 as it varied with employment, number of earners in the family, presence of children, age, and own earnings. These estimates are shown in table 4.

The estimates should be interpreted cautiously for two reasons. First, the sample on which the estimates of hours are based is small. It includes 793 women but for a few of the cells the sample is less than 50 (see table 4, column 1). Second, no attempt is made to control for correlations among variables. For example, a woman's age is correlated with the presence of children in the household. Consequently, some of the variables discussed here may not be significant determinants of the value of a woman's household work when they are considered simultaneously with other variables.

Employment.--Employment has a major effect on the allocation of time. Declines in leisure time, sleep, volunteer work, and household work have been traced to employment in the market (see Robinson (8), Robinson (9), Strober and Weinberg (10), and Walker and Woods (14)). The important effect of employment is not surprising given the large block of hours market work requires, whether employment is full-time or part-time.

A woman's household work in 1976 averaged 42.6 hours a week when she was not employed, 31.4 hours when she was employed part-time, and 20.1 hours when she was employed full-time (see table 4). The shift from nonemployment to full-time employment roughly halved weekly hours in household work. It should be emphasized that these raw data undoubtedly overstate the effect of employment on household work because other variables are ignored; for example, employment is correlated with the presence of fewer and older children, which also reduces household work.

Each type of household work shared in this decline. Child care declined the most in percentage terms, shopping and other the least. Cleaning and gardening declined more than meal preparation and cleanup.

Yet, even for a woman employed full-time, hours in household work remained sizable. All work hours (in the home, in the market, and in job-related commuting) totaled 66.9 a week for a woman working full-time and 52.2 a week for a woman working part-time.^{2/} Consequently, an employed woman had considerably fewer nonwork hours--to use in leisure activities for example--than did a nonemployed woman.

The value of a woman's household work fell with household work hours. It totaled \$8,405 a year when she was not employed, \$6,243 when she was employed part-time, and \$4,040 when she was employed full-time.

The effect on the household of this decline in an employed woman's hours of household work might be offset in three ways: (1) the woman might accomplish the work more efficiently, that is, in less time; (2) other household members might increase their household work hours; and (3) market-purchased goods or services might be substituted for the unpaid household work. No evidence appears to exist concerning the relative efficiency of employed and nonemployed women. On the second point, the evidence shows very little added household work by husbands when the wife is employed (see Robinson (9) and Walker and Woods (14)). On the third point, the evidence seems to show no important substitutions of paid help for ordinary household care; however, child care does seem to increase significantly and restaurant meals may also increase (see Hofferth and Moore (4), Ortiz et al. (6), and Strober and Weinberg (10)). The share of household expenditures going to services does increase with employment of women but this appears to be accounted for by increased work-related expenses of employed women, not by the substitution of market goods and services for unpaid household work (see Vickery (13)). Thus, the evidence seems to show that goods and services provided by household work are lower in homes where the woman is employed than in homes where she is not employed, and further that the substitution of market purchases does not fully offset the lower household work.

2. A man working full-time averaged somewhat lower total hours: 62.9 a week, including 11.6 in household work. A man's commuting time averaged almost 1 hour a week more than a woman's and a man's market work averaged about 4 hours more, perhaps because of more overtime, more second jobs, and more job-related travel, all of which are included in market work hours.

Number of earners.--With the rise in employment of women, the numbers of two-earner families have increased. While the employment of a wife raises family money income, it lowers the value of the wife's household work. The value of that work for a woman in a two-earner family was \$6,036 in 1976, as compared to \$9,157 for a woman in a one-earner family (see table 4). On average, then, the value of a woman's household work was estimated to be \$3,121 less when she was in a two-earner family rather than in a one-earner family.

Consequently, comparisons of the relative well-being of one- and two-earner families are misleading when they focus on money income alone. The one-earner family is clearly better off economically than the two-earner family with identical money income. Not only is the value of household work lower in two-earner families but their leisure time is also. And perhaps around one-third of the wife's paycheck goes into work-related expenses such as taxes, commuting costs, and child care (see Vickery (13)).

Presence of children.--The presence of children is one of the more important determinants of time use (see Robinson (9) and Walker and Woods (14)). It leads directly to the devotion of sizable blocks of time to child care and indirectly to increased amounts of other household work. Both the number of children and the age of the youngest child influence the hours and value of a woman's household work.

Hours a week in child care in 1976 rose from 1.2 when there were no children to 5.9 when there was one child, to 9.1 when there were two children, and to 8.5 when there were three or more children. Consequently, the more children there were, the less was care per child (see Hill and Stafford (3)). The value of these hours averaged \$758 a year for a woman with one child, \$1,194 for a woman with two children, and \$1,113 for a woman with three or more children (see table 4).

When the youngest child was 1 to 4 years of age, hours in child care averaged 12.4 a week; they declined to 5.4 when the youngest child was 5-12 years and to 2.9 when the youngest child was 13-17 years. The value of time spent in child care averaged \$1,598, \$720, and \$375 a year, respectively (see table 4). These raw data may be misleading because of correlations between numbers of children and age of youngest child but it does appear that care per child was less the older the child.

The presence of children also meant added hours spent in meal preparation and cleanup and in doing laundry. The combined increases in child care and in other types of household work resulted in a steadily rising value of a woman's household work with the number of children: from \$6,078 a year when there were no children to \$6,423 when there was one child, to \$7,748 when there were two children, and to \$8,354 when there were three or more children. Hours in meal preparation and cleanup and in doing laundry rose to some degree as the youngest child aged, partially offsetting the decline in child care hours. Nonetheless, the value of a woman's household work fell as the age of the youngest child rose: from \$7,969 when the child was 1-4 years of age to \$7,209 when the child was 5-12 years, and to \$6,981 when the child was 13-17 years.

Age.--The raising of children affects the changing profile of a woman's household work over the life cycle. In 1976, the value of time spent in child care reached a peak of \$1,097 a year when a woman was 25-29 years of age and then declined continually as a woman aged (see table 4). No other type of household work varied as much in percentage terms over the life cycle.

All types of household work (except home repairs and hobbies) increased in the early years of adulthood, as shown by changes in household work of women from ages 18-24 to ages 25-29. Beyond age 29, changes in household work were modest, with two major exceptions: (1) child care, which declined sharply, as noted above, and (2) cleaning and gardening, which rose sharply after age 64. This rise in the value of cleaning and gardening work over the life cycle--and indeed the slight rise in work associated with meals--is surprising, since one would expect the values of such work to decline as children age and eventually leave the home. Whether this means women become less efficient, or do more household work because they have more time, or spend more time in gardening because for some it is a leisure activity is uncertain. In addition, these cross-sectional data may give a misleading picture of life cycle changes; women in the younger generations may simply spend less time cleaning and cooking at every age than do women in the older generations.

When the types of household work were aggregated, their total value showed a sharp rise from \$4,897 a year at ages 18-24 to \$7,043 at ages 25-29. Thereafter, changes were fairly small. Even after the "retirement age" of 65, a woman's household work did not diminish. Consequently, the life cycle profile of the value of household work was distinctly different from the life cycle profile of money earnings, with its characteristic inverted U shape resulting from reduced earnings in the later years of life.

Own earnings.--Increases in a woman's own earnings might be expected to lower the hours of her household work. For a woman who was employed full-time, there was a slight decline in hours of household work when her annual earnings were over \$10,000. These hours were 21.0 a week when her earnings were \$1-4,999, 21.1 when her earnings were \$5,000-9,999, and 19.2 when her earnings were \$10,000 or more (see table 4). The annual value of her household work was \$4,255, \$4,244, and \$3,912, respectively.

The way in which the value of household work varies with the level of a woman's own earnings depends on the technique that is used to value the household work. Opportunity cost techniques, which use wages foregone by the woman doing the work, result in rising rather than falling values of household work with rising earnings: from \$1,567 when earnings are \$1-4,999 to \$4,795 when earnings are \$10,000 or more. This rise in value occurs even though hours spent in household work decline with earnings. Only if the efficiency of women in household work rises with their earnings, which are in turn presumably related to education, will opportunity cost techniques result in reasonable relative values of the real product of household work across earnings classes. Moreover, opportunity cost techniques provide questionable relative values for earners as compared to nonearners; with these techniques, the hourly value of household work of nonearners is likely to be lower, even though their experience in such work is greater.

CHANGES IN THE VALUE OF HOUSEHOLD WORK SINCE 1976

Since 1976 the value of household work has risen sharply along with wage rates. In 1981, rough values are \$10,000 for the average woman and \$5,000 for the average man, increases of 47 percent since 1976. For the average full-time homemaker, a rough value is \$12,500. In the aggregate, the value of household work has increased by about 60 percent to \$1,200 billion for all adults, \$825 billion for women, and \$375 billion for men; this increase reflects population growth as well as growth in wage rates.

These rough estimates assume no change in the hours spent in household work since 1976. However, household work hours of women have probably declined. For all women, regardless of employment status, the evidence points to some significant, but rather small, declines in hours from the mid-sixties to the mid-seventies (see Goebel (2) and Robinson (8)). Such declines may have continued in recent years. In addition, paid employment of women continued to increase, bringing with it the declines in household work hours we documented earlier.

It is important to understand, and to quantify, declines in household work hours that result from paid employment because they are sizable, they affect the family dramatically, and they will continue into the foreseeable future. For example, women's labor force participation rates were 51 percent in 1979; by 1990 they are projected to reach at least 60 percent (Personick (7)). Better understanding of the relationship between household work hours and paid employment depends on more thorough research and on better time use data. More thorough research requires multivariate analyses of household work hours. Better time use data entails new surveys with larger and more representative samples (perhaps with longitudinal components in which the same family is followed over time).

CONCLUSION

The estimates presented here substantiate the importance of household work. Its value is around 44 percent of GNP and for women, who account for most household work, its value is roughly double their reported money earnings. In addition to their supplementation of GNP, estimates of the value of household work have a number of important uses. They are critical tools in litigation concerning deaths, injuries, and divorces because they establish the economic contribution of homemakers to their families. They can also aid in policy reforms such as the treatment of women in the social security system and the treatment of two-earner families in the income tax system.

Estimates such as these should become a standard component of our statistical series. For this to occur, data on household time use should be available at regular intervals, at least every ten years and preferably every five years. In addition, some organization--public or private--must accept the responsibility for preparing estimates of the value of household work. On neither count does the present situation offer much encouragement. An SRC time use survey proposed for the early 1980's has yet to be funded and the BEA program to value household work is being phased out. Yet only with the regular availability of estimates of the value of household work are we likely to make substantial progress in recognizing household work on a par with market work.

Table 1.--Market Equivalent Occupations and Wage Rates for
Each Type of Household Work

Type of household work	Market equivalent occupations	Market wage ^{1/}	Weight ^{2/}	Weighted average wage
Meal preparation	Cooks (eph) ^{3/}	3.54	.9605	3.49
	Cooks (ph) ^{3/}	2.28	.0395	
Meal cleanup	Waiters/waitresses	3.27	.7899	3.35
	Dishwashers	3.47	.1338	
	Busboys	3.93	.0763	
Cleaning and gardening	Maids/servants (ph)	2.26	.1557	3.90
	Cleaning service workers	4.39	.4341	
	Gardeners/groundskeepers	4.84	.0626	
	Miscellaneous laborers	4.83	.1482	
	Farm laborers	3.04	.1832	
	Dressmakers/seamstresses	3.98	.0162	
Laundry	Laundresses (ph)	2.43	.0165	3.66
	Laundry and drycleaning workers	3.66	.4470	
	Clothing ironers and pressers	3.69	.5365	
Home repairs and hobbies	Painters	6.38	.1390	6.13
	Painters' apprentices	5.52	.0009	
	Carpenters	6.82	.3979	
	Carpenters' apprentices	5.49	.0051	
	Auto body repairmen	5.83	.0496	
	Auto mechanics	5.34	.3781	
	Auto mechanics' apprentices	4.80	.0017	
Child care and instruction	Roofers and slaters	6.68	.0277	2.46 ^{4/}
	Child care workers (ph)	2.04	.6568	
	Child care workers (eph)	3.09	.2972	
	Welfare service aides	4.34	.0460	
	School monitors	4.83	.1642	
Shopping and other	Teacher aides	3.91	.8358	4.06 ^{4/}
	Messengers	4.47	.0270	
	Housekeepers (eph)	4.35	.0490	4.65 ^{5/}
	Housekeepers (ph)	2.62	.0470	
	File clerks	4.58	.1742	
	Bookkeepers	4.83	.7031	3.62 ^{5/}
	Nursing aides	3.55	.8562	
	Health aides	4.04	.1438	

1. Wage rates in 1969 are average annual earnings divided by average weeks worked and average hours per week (U.S. Department of Commerce (11)). The wage rates are adjusted to 1976 levels on the basis of the rise in average hourly earnings from 1969 to 1976 for various industry divisions (U.S. Department of Labor (12)).
2. Weights are the 1970 percentage of workers in each specific occupation relative to all workers in each type of household work. For example, there were 819,674 workers in occupations "equivalent" to meal preparation. Of these, 787,309 were Cooks (eph). Thus the weight for Cooks (eph) is $787,309/819,674 = .9605$ (U.S. Department of Commerce (11)).
3. The designations (eph) and (ph) stand for "except private household" and "private household."
4. Weighted average wage rates were calculated separately for child care and for child instruction. The separate estimates were combined into a single type in this paper.
5. Weighted average wage rates were calculated separately for several of the activities in shopping and other. The separate estimates were combined into a single type in this paper.

Table 2.--Alternative Values of Household Work in 1976
(Billions of dollars)

Population group	Market cost valuation		Opportunity cost valuation		
	Housekeeper cost ^{1/}	Specialist cost	Gross compensation ^{2/}	After-tax compensation ^{3/}	Net compensation ^{4/}
Adults	540.0	752.4	1015.4	865.0	751.8
Women	386.4	515.0	608.1	522.5	433.2
Men	153.6	237.4	407.3	342.5	318.6

1. Based on hourly compensation rates of private household workers.
2. Hourly compensation rates are based on earnings and hours reported on the SRC survey, adjusted for supplements to earnings. For those with no reported earnings, compensation rates are imputed on the basis of compensation by age, sex, and education characteristics.
3. Gross compensation less estimated marginal Federal and State income taxes.
4. Hourly after-tax compensation less average expenditures per hour of work for child care and commuting and the value of an hour of commuting time. All child care expenditures are attributed to women.

Table 3.--The Hours and Value of Household Work In 1976^{1/}

Type of work	Total for all adults				Average per adult		
	Annual hours		Annual value		Weekly hours	Annual hours	Annual value (dollars)
	Billions	Percent ^{2/}	Billions of dollars	Percent ^{2/}			
Adults:							
All work	188.8	100.0	752.4	100.0	25.0	1,300	5,180
Women:							
All work	135.1	100.0	515.0	100.0	33.8	1,756	6,694
Meal preparation	29.0	21.5	101.2	19.7	7.3	377	1,316
Meal cleanup	9.4	7.0	31.5	6.1	2.4	122	409
Cleaning and gardening	35.2	26.1	137.5	26.7	8.8	458	1,787
Laundry	9.7	7.2	35.6	6.9	2.4	127	463
Home repairs and hobbies	2.8	2.1	17.5	3.4	.7	37	227
Child care and instruction	16.3	12.1	40.8	7.9	4.1	211	531
Shopping and other ^{3/}	32.7	24.2	150.9	29.3	8.1	425	1,961
Men:							
All work	53.7	100.0	237.4	100.0	15.1	786	3,475
Meal preparation	5.6	10.4	19.7	8.3	1.6	83	289
Meal cleanup	1.3	2.4	4.3	1.8	.4	19	63
Cleaning and gardening	13.1	24.4	50.9	21.4	3.7	191	745
Laundry	.4	.7	1.6	.7	.1	6	23
Home repairs and hobbies	9.9	18.4	60.6	25.5	2.8	145	888
Child care and instruction	3.9	7.3	10.0	4.2	1.1	58	146
Shopping and other ^{3/}	19.5	36.3	90.2	38.0	5.5	285	1,322

1. Household work is valued by specialist cost.
2. The relative importance of each type of work differs somewhat for values as opposed to hours because the specialist cost valuation technique assigns different hourly values (wage rates) to each type of work. Work on home repairs and hobbies was assigned the highest wage rate, hence its share of value was greater than its share of hours; child care and instruction was assigned the lowest wage rate, hence its share of value was less than its share of hours.
3. Other consists mainly of bill paying, recordkeeping, and volunteer work.

Table 4.--The Average Value of A Woman's Household Work in 1976, By Various Characteristics^{1/}

Characteristic	Number in sample	Weekly hours	Annual value of household work (dollars)							
			Total	Meal preparation	Meal cleanup	Cleaning and gardening	Laundry	Home repairs and hobbies	Child care and instruction	Shopping and other
All women	793	33.8	6694	1316	409	1787	463	227	531	1961
Employment status:										
Not employed	367	42.6	8405	1668	508	2351	612	282	695	2289
Employed part-time	245	31.4	6243	1189	381	1570	397	234	520	1952
Employed full-time	181	20.1	4040	814	256	1000	268	113	235	1354
Number of earners: ^{2/}										
None	42	40.0	8010	1785	698	2508	443	307	276	1993
One	250	46.9	9157	1892	556	2226	767	308	904	2504
Two	284	30.7	6036	1250	406	1537	409	158	507	1769
Number of children:										
None	401	29.5	6078	1174	366	1801	362	274	155	1947
One	134	33.2	6423	1201	426	1509	442	182	758	1904
Two	120	41.4	7748	1644	469	1974	658	140	1194	1669
Three or more	138	43.7	8354	1682	497	1874	693	176	1113	2319
Age of youngest child:										
No children	400	29.5	6079	1178	363	1806	363	270	155	1945
1-4 yrs.	161	43.5	7969	1463	474	1830	540	134	1598	1931
5-12 yrs.	170	36.8	7209	1544	452	1593	616	253	720	2032
13-17 yrs.	62	35.2	6981	1424	482	2039	639	560	375	1966
Age:										
18-24 yrs.	110	24.7	4897	840	299	1155	220	246	526	1611
25-29 yrs.	116	37.1	7043	1304	366	1652	515	171	1097	1938
30-39 yrs.	181	36.5	7030	1440	422	1614	533	183	886	1951
40-49 yrs.	112	34.4	6845	1365	439	1872	527	165	434	2042
50-59 yrs.	110	35.1	7121	1364	420	1966	631	295	341	2103
60-64 yrs.	49	33.6	6825	1490	425	1928	454	232	230	2066
65 yrs. and over	114	35.4	7280	1494	492	2433	372	294	89	2105
Own earnings: ^{3/}										
None, negative, N.A.	36	18.7	3697	841	250	1061	334	47	181	984
\$1 - 4999	33	21.0	4255	832	299	962	181	68	246	1667
\$5000 - 9999	66	21.1	4244	824	271	953	301	137	298	1462
\$10,000 and over	46	19.2	3912	766	212	1037	222	165	191	1318

- Household work is valued by specialist cost.
- Data are for only those women who are married, spouse present. Hence, the data are not related to the totals for all women.
- Data are for only those women who are employed full-time. Hence, the data are not related to the totals for all women.

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The time-diary method of measuring time allocation represents a significant advance in accounting for what may be America's most precious natural resource. It provides a complete accounting of time, one resource that is equally distributed to all segments of our society -- at least in the short run. How productively or how wisely that resource is used is another matter.

Time allocations by themselves are limited in what they reveal about human behavior, such as its productivity or wisdom. In order to answer such questions, the analyst must attach some a priori values (either monetary, utilitarian, or moral) about time, or else ask people themselves how much they value what they do or the "output" from how they spend time. While Jan Peskin's paper has taken the former course, this paper is taking the latter.

It will review some data from the same time-use project, with the same small (by government standards) but nationally representative sample. That sample consisted of a cross-section of almost 2,500 American adults and their spouses who were interviewed and completed 24-hour time diaries in the Fall of 1975. The Survey Research Center of the University of Michigan, which conducted this survey, recontacted the respondents by telephone on three subsequent occasions in 1976 asking them to complete another daily time diary on each occasion. An extensive set of background and "subjective" questions about the values respondent attached to various uses of time were also included in this four-wave study. The final data tape for the project consisted of almost 8,000 variables, making it one of the most complex and richest social science data sets in the United States. Reference will also be made to an earlier non-rural national sample of 1,244 respondents who completed single-day time diaries in the Fall of 1965.

Before proceeding to describe some of the analytic results of this study, readers need to be warned that they will likely encounter some unexpected, counterintuitive and even unexplainable findings; these challenge conventional wisdom about how societal life is organized and is changing. The time diary data, for example, indicate that Americans spend less time working than official government figures on the workweek suggest, that we don't watch nearly as much television as Mr. Nielsen's ratings suggests (although it's still too much), and that bowling rather than baseball is our national sport. Popular models of America as a "post-industrial" society -- either in the midst of a flowering of culture,

cuisine and recreating or evolving into a "harried leisure class" -- receive very little support in the time diary data (Robinson 1979). That may help to set the stage for some findings below, which are perhaps more counter-intuitive than for the other ways Americans use their time.

Time Spent on Housework

In both 1965 and 1975 studies of time, women reported close to 80% of all the household work or family care in America¹ -- a figure that is not atypical for other Western or Eastern European countries in which time diary studies have been conducted. While this proportion was lower in 1975 than a decade earlier, that was mainly a result of women doing less housework and not of men doing more housework. Some of the decreased time was due to the fact that more women were in the paid labor force in 1975 than in 1965, and that fewer were married or had children to care for than in 1965: Extensive multivariate analysis, however, revealed that this was part of a historical shift as well (Robinson 1980) -- for the first time in this century, it appeared that (other things being equal) women were simply devoting less time to housework and family care than had previous generations of women.

The time diary data in both 1965 and 1975 also have provided vivid testimony to how insensitive men's family care time was to the pressures that escalate women's family care time. While a woman's family care time increases dramatically when she becomes married or has children and declines dramatically when she enters the paid labor force, men's housework is barely affected by any of these factors. Even when men retire and their housework does increase, that household work is likely to take place outside the home -- either in the yard or garden, or in stores -- rather than inside the dwelling unit where the "hard core" housework is performed; and men's child care time, within that much smaller time they spent with children than women do, is more likely to be spent in "interactional" activity (e.g. play or reading) rather than custodial (e.g. feeding, dressing) activities with the children involved.

How, then, do women react to the imbalances in this generally sexist division of household labor? Do they find their lives less satisfying, or their free time less fulfilling? Do they look for more help from their husbands in household or child care? The answers to these questions when asked of these same women, in large part, seems to be "No" -- at least in terms of the subjective questions referred to earlier. Even women in the most time-demanding conditions -- employed full-time and with young children at home -- do not describe their lives or their free time as less

¹In this paper, we include in family care, all household cleaning, meal preparation, laundry, child care and shopping. For further data on the methodology of time-diaries, see Szalai et. al. (1972) and Robinson (1977).

satisfying than women who have neither of these responsibilities. Nor do most married women say they expect or wish for more help from their husbands (Robinson 1977). While the proportion of women expressing such opinions in 1975 did increase from the 19% stating that wish in 1965, it still amounted to less than a third of all wives.²

The limits to how much the male-female imbalance in household tasks will be redressed in future marriages may also be suggested by further data about the territoriality of housework evident in the time diaries. One interesting comparison is between single men and single women, neither of whom have marital partners nor children who require attention. Single women (without children) still do two to three times as much housework as their male counterparts. Not that the current state-of-affairs means that women have less free time generally than men. On the whole, adult men and women have roughly equivalent amounts of free time across the life cycle. But, of course, that is because of the imbalance between full-time homemakers (who have more free time than men) and women in the labor force (who have less). What the time-diaries do make abundantly clear is that it is the married working mother who comprises the "harried leisure class" in our society. The quantitative data are reinforced by subjective indicators in the study. Far higher proportions of married working mothers described themselves as "always feel rushed to do the things you have to do" than any other social segment of the population responding to the question.

That is in large part due to their dual career in the home. Table 1 shows the major variations in time devoted to family care activities by women in and out of the paid labor force. For this purpose, the comparable 1965 and 1975 data have been combined into a single data file. The roughly 2-to-1 margin of family care reported by full-time homemakers in Table 1 (442 minutes per day) compared to employed women (224 minutes) was found in both the 1965 study (455 vs. 234 minutes) and the 1975 study (412 vs. 209 minutes). The first column of Table 1 also shows how much other background factors appear to influence family care time, particularly marital status and the age and number of children in the household.

The figures for many of the factors in Table 1 are confounded by this correlation of age with marriage and children. For example, the higher than average housework for women age 30-39 is due to these being the peak years when more and younger are present; the same confounding is present in the figures for women who lived in owned rather than rental housing, or women with lower educational levels. In order to control for the effects of these outside influences, therefore, the data were subjected to

²This results was not apparently an artifact of how the question was phrased or whether the husband was present when it was asked. Follow-up open-end questions reveal that women deeply feel housework is not in their husband's "territory." Moreover, more women expressed a desire for more husband help when the husband was present during the interview than when the woman was interviewed by herself.

the Multiple Classification Analysis (MCA) of Andrews et al. (1969). The MCA program statistically "purifies" these figures for each category for each variable of the effects of other factors that are related to the dependent variable -- here family care time.

The first rows of Table 1 show that when corrected for the effects of all these other factors, employed women still only spend two-thirds as much time on family care (248 minutes per day) as do housewives (406). It is to the economic and social ramification of these differences that we now turn our attention.

The Output from Family Care

Are there benefits from housework time that employed women sacrifice when they invest their time at the workplace as well as the household? What is it that makes them as satisfied with their lot in life as women who do not work? Is there any return for their sacrifice of free time, or their more harried life style? In particular, what differences in "output" from their lower time spent at housework can we identify?

The notion of outputs from uses of time arises, naturally, from attempting to apply the models from the science of economics to how people spend their time. While it may be arguable whether such "rational man" models that economics uses to describe how people (men) spend their money should apply to how women spend their time, many economists have taken that notion very seriously -- particularly in order to explain or predict such a "productive" use of time as housework (e.g. Becker 1965). The problem for the economists then becomes one of specifying the outputs from such allocations of time, and the (male) economists I have been working with in the project have struggled mightily to develop some credible measure of household output. The results of our struggle are clearly not the final word on this issue, but what we have found with our imperfect measures so far may be instructive. If they do no more than to stimulate someone else to devote the effort to developing some better measures of output, the struggle will not have been in vain.

Our measures of output have focused on the "quality" of the final product involved. Quality here refers to how clean and neat the house is, how clean or adequate is the supply of laundry, how good or adequate is the supply of food in the house, and how well-brought up are the children? Probably the ideal way to measure such quality of output is to have standardized ratings of such factors made by experts in the fields of household sanitation, high cuisine or developmental psychology. But that option was clearly not feasible with a national sample scattered across the country and already burdened with providing us with over four hours of information. At this point, then, we were forced to rely mainly on the subjective reactions of the respondents themselves; and it may be argued, as the final consumers of the products involved, they are in the best positions to judge its value.

We, therefore, asked our respondents to rate these various outputs using a 0 to 10 scale (like the one now widely recognized both from television's Gong Show and the movies' depiction of Bo Derek). If they found the cleanliness of the household to be completely satisfactory, they were to rate it a ten and, if they found it completely dissatisfactory, they were to rate it a zero; to the extent they were less than completely satisfied they were to rate it that many numbers below ten or about zero.

Very few householders rated themselves a ten, or even a nine, on this scale. The average rating for household cleanliness was 7.26, with men's ratings being slightly higher than women's. But it is to the women's ratings that we devote most attention, and particularly to the employed women who in Table 1 reported only half to two-thirds much family care time as their homemaker counterparts. These data are shown in Table 2 before and after correction by MCA, with the control factors of age, income, marital status, sex, race and education in the analysis equation. As Table 2 shows, this correction is important because the significantly greater satisfaction with household cleanliness among full time housewives (average score 7.38) than employed women (7.01) does not hold up after these other factors are controlled. In other words, when one takes in account the differential composition of women in and out of the paid labor force in age, income, etc., women's employment per se does not emerge as significant predictor of how satisfied they are with household output.

Moreover, the same pattern tends to be repeated when satisfactions with other household outputs are examined in Table 2. Only for one output, quality of the main meal, is a significant difference found after these other six factors are taken into account; and this only holds at the .05 level of significance. With regard to the amount of food in the house, the cleanliness or availability of laundry or the time spent with or the accomplishments of children, no significant difference existed between employed women (who spend minimal time with it due to outside job pressures) and women who devote at least half again as much time to it in their roles as full-time homemakers.

It might well be argued, however, that our question tapped only the respondent's standards and that women who have entered the paid labor force have simply lowered their standards of achievement; that would account for this lack of difference. We wrestled with this problem for many months and examined many possible remedies. The following approach is the one that we settled on and it involved introducing a quasi standard bearer of performance as a judge. There was no way we could think of to make it the same standard bearer for all respondents. But when we introduced the concept of "a person who is very picky about things", most respondents had no trouble identifying the type of standard bearer we had in mind. We then asked our respondents to say how this "picky person" would rate their household's output on our 0-10 scale for three of our criteria -- cleanliness of the household, cleanliness of the laundry and quality of the main meal. These average ratings are shown in Table 4.

In general, the introduction of the picky person did serve the intended purpose of deflating the values on the 0-10 scale. On the house cleanliness scale, for example, the average rating decreased almost one whole scale point from 7.26 to 6.36. Otherwise, Table 4 shows the adjusted scale produced the same pattern of responses as in Tables 2 and 3: housewives rated their various productivity characteristics higher than employed women did, but not significantly beyond chance after correction for outside factors, i.e. once these other differences were taken into account. The one exception appears to be in the quality of meals, but even here the difference is not highly significant statistically.³

Realizing that this still may not be considered the final word on the topic and that we are still at the mercy of our respondents reporting, I can report that similar results were obtained with what might be considered more objective set of ratings. These were made by the interviewers of the Survey Research Center at the time of their first and only visit to the respondents' premises. The observation about the cleanliness of the household were recorded immediately after the interview; using a scale from 1 (very clean) to 5 (dirty). The average scale rating by the interviewers were 1.91 or close to the "clean" rating on this five-point scale, which is roughly how the respondents rated the cleanliness of their own houses on the 0-10 scale.

The important point, however, is that the average interviewer ratings were once again not significantly different for employed women and for housewives. To be sure, the measures themselves were subject to several uncontrolled sources of interviewer variation and could have been greatly improved with greater recording detail or with proper interviewer training. But the fact that the results converge so well with those from the subjective ratings of respondents themselves leads me to believe that hours spent away from home at the workplace may not be an important source of variation on some very significant criteria of household productivity.

Summary and Conclusions

Despite the large differences in the time spent in housework and other family care activities by full-time homemakers and women in the paid labor force, little evidence was found to indicate that household production suffered significantly as a consequence of employment. Employed women rated the cleanliness of their households almost as favorably as did full-time homemakers, and our outside (interviewer) ratings agreed with that assessment. Little difference was also found in ratings between employed women and housewives in how they evaluated the amount of food, amount and cleanliness of laundry and the accomplishment of their children. While housewives rated the quality of their main meals significantly higher than employed women, it was only at marginal levels of significance.

³Moreover, the differences are reduced into insignificance when other factors are added into the analysis, factors such as the enjoyment the woman derives from the cooking or the energy and effort she devoted to it.

These results do not stand in complete isolation. For example, there does not seem to be any convergent evidence that children raised by mothers who work are any worse off psychologically or emotionally as a result (E.G. Hoffman and Nye, 1974). This raises basic questions about the assumption that household productivity can be properly accounted for strictly in terms of hours spent. If an employed woman can accomplish much the same levels of productivity -- and without feeling more dissatisfied in the process -- then it becomes difficult to argue that all hours of housework should be valued equally.

All of this, of course, hinges on our present tentative measures of output or productivity. As noted earlier, these measures need far more verification of their validity and reliability. In this regard we are currently analyzing the correlation between respondent and interviewer ratings of cleanliness, as well as the ratings of husbands of wives who are employed or not employed in the paid labor force -- since they too are affected by the quality of household output. We have also examined more directly quantitative measurements of output; while it is true that housewives do cook more meals and wash more loads of laundry, the amounts involved fall far short of the two-to-one or three-to-two ratios of time expenditure in Table 1.

Our results are intended to raise questions, rather than to answer them. They are limited by the sex and academic disciplines of the investigators involved. Nonetheless, this reinforces the need for more definitive and comprehensive study of what happens in the household as a result of what women invest and sacrifice in it with their time and energy. At a time when so many women are conflicted about the costs and benefits of dual careers, the time for careful and considered answers is clearly upon us.

Table 1: Differences in Women's Family Care Time by Background Factors

		<u>Combined 1965 - 1975 data</u>	
(N=1138)		<u>Before</u>	<u>After</u>
		<u>Correction</u>	<u>Correction</u>
<u>Paid Labor Force</u>			
Employed	(560)	224 min./day	248 min./day
Housewife	(513)	442	406
Unemployed	(44)	266	335
Student	(21)	169	251
<u>Adults in Household</u>			
One	(236)	228	324
Two	(755)	359	324
Three +	(147)	288	315
<u>Age</u>			
18-29	(329)	301	290
30-39	(284)	379	320
40-49	(250)	337	342
50-65	(274)	280	347
<u>Race</u>			
White	(953)	332	327
Black	(116)	269	295
Other	(69)	283	295
<u>Marital Status</u>			
Married	(779)	369	336
Widowed	(118)	233	293
Divorced	(95)	259	307
Single	(125)	163	281
<u>Children</u>			
None	(471)	231	257
One, over			
4 years	(135)	291	295
One, under			
4 years	(61)	393	390
Two, over			
4 years	(227)	382	355
Two, under			
4 years	(130)	434	406
Three+, over			
4 years	(46)	417	388
Three+, under			
4 years	(59)	535	499
<u>Home</u>			
Owner	(722)	349	322
Renter	(356)	288	323
Both	(25)	234	305
Not Known	(35)	187	355

<u>Religion</u>		
Catholic	(348)	331
Protestant	(706)	322
Jewish	(50)	315
None, other	(34)	272
<u>Education</u>		
<u>Grade</u>		
school	(127)	328
Some high school	(187)	331
High school grad	(507)	330
Some college	(176)	306
College grad	(134)	308
<u>Income (1965)</u>		
Under \$3000	(136)	262
\$3000-5999	(158)	317
\$6000-9999	(171)	347
\$10,000-14,999	(218)	337
\$15,000+	(391)	335
<u>Year</u>		
1965	(700)	345
1975	(438)	288

Table 2: Differences between Employed Women and Housewives in Ratings of Satisfaction with Household Cleanliness
(on scale between 0 = completely dissatisfied
and 10 = completely satisfied)

1975 Data Only		
	<u>Before Correction</u>	<u>After Correction</u>
In paid labor force (n=349)	7.01	7.13
Outside paid labor force (n=324)	<u>7.38</u>	<u>7.30</u>
Difference	.37	.17
Approx. t-value	2.81	1.31
Significance	.01	NS

Table 3: Differences Between Employed Women and Housewives in Satisfaction Levels with Various Household Outputs

		1975 Data Only	
		<u>Uncorrected</u>	<u>Corrected</u>
<u>FOOD</u>			
a)	How good are the main meals?		
	In paid labor force (349)	7.65	7.76
	Outside paid labor force (322)	8.14	8.06
	Difference	.49	.30 (Sig [±] at .05 level)
b)	Amount of food in the house		
	In paid labor force (350)	8.04	8.24
	Outside paid labor force (322)	8.47	8.33
		.43	.09 (NS)
<u>CLOTHING</u>			
a)	How clean is the laundry?		
	In paid labor force (350)	8.71	8.78
	Outside paid labor force (322)	9.02	8.93
		.31	.15 (NS)
b)	The amount of clean clothese available		
	In paid labor force (350)	8.74	8.85
	Outside paid labor force (322)	9.14	9.04
		.40	.19 (NS)
<u>CHILDREN</u>			
a)	The amount of time you spend with your children		
	In paid labor force (169)	6.88	6.95
	Outside paid labor force (175)	7.32	7.18
		.44	.23 (NS)
b)	How well your children are doing in life		
	In paid labor force (169)	8.28	8.36
	Outside paid labor force (175)	8.43	8.35
		.15	-.01 (NS)

Table 4: Differences between Employed Women and Housewives on Hypothetical Production Ratings of a "Picky Person"

	<u>Uncorrected</u>	<u>Corrected</u>
How clean your house is?		
In paid labor force (347)	6.13	6.33
Outside paid labor force (316)	<u>6.52</u>	<u>6.36</u>
	.39	.03 (NS)
How clean your laundry is?		
In paid labor force (346)	8.00	8.12
Outside paid labor force (314)	<u>8.26</u>	<u>8.13</u>
	.26	.01 (NS)
How good the main meal of the day is?		
In paid labor force (347)	7.30	7.42
Outside paid labor force (318)	<u>7.92</u>	<u>7.80</u>
	.62	.38 (Sig \pm at .05 level)

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Outlook 82: Soviet Trade Prospects

by

Robbin S. Johnson

November 3, 1981

Washington, D.C.

U.S.-Soviet trade relations would be smoother if the Soviets were like other customers. The problem is that the Soviet Union is different. The challenge is to accommodate those differences within a market-oriented policy.

A History of Differences

When the United States sold grain to Russia in 1963, the sales were criticized as helping the enemy. To sweeten the pot of benefits for the United States, President Kennedy added an after-the-fact requirement that half the sales move on more expensive U.S.-flag vessels. This scuttled any further business for the rest of the 1960s.

Under President Nixon a new policy of detente with the USSR emerged. The U.S.-flag requirement was lifted, and trading opportunities with Russia reopened. Soon

after, the Soviets bought from U.S. grain exporters about one million tons of soybeans, four million tons of corn and nearly 10 million tons of wheat for shipment by June 1973.

The public concluded that the door was opening to fast and too wide. Under the slogan of the "great grain robbery" a new criticism emerged--that the Soviets were predatory buyers that could outfox American traders and disrupt the U.S. grain marketing system. This impression was both strong and wrong, but the resulting outcry turned the purpose behind these sales on its head. What President Nixon intended as one of the fruits of detente became instead the beginning of disenchantment with detente.

Interestingly, in the following tight supply years, the Soviet Union largely withdrew from the U.S. market. Its purchases in 1974/75--limited in part by U.S. controls--were only two million tons.

A disastrous 1975 crop, however, brought the Soviets back into the U.S. market in a big way. This surge in their demand led to a "suspension" of sales and negotiation in October of that year of a five-year grain sales agreement--the so-called Long-Term Agreement or LTA.

The LTA sought to accomplish two things. On the one hand it sought to protect the U.S. economy from "market disruption." On the other hand it also sought to

preserve the opportunity to capture the booms in Soviet demand when our supplies permitted. In other words, the LTA sought to manage Soviet demand some years and exploit it in other years.

The 1980 grain embargo signalled a slip in U.S.-Soviet relations back toward the tensions of the 1960s. Grain trade again became an adjunct to U.S. foreign policy. As a result, the United States slipped from most preferred to least preferred supplier. Prior to the embargo, the United States typically accounted for two-thirds or more of Soviet agricultural imports, not far from the 60 percent U.S. share of world grain trade as a whole. After the embargo its share slipped to 20 percent of a trade that had increased by one-third. This coming year will be better, but the U.S. share will remain below 40 percent of Soviet food imports.

In other words, the Soviet Union has always been a market governed by special rules. This situation has been complicated by the fact that the rules keep changing. As we look toward the future of U.S.-Soviet grain trade, it is likely that Russia will remain a "special" market. It is hoped, however, that grain trade policy can develop more consistency. Such consistency starts by recognizing how the Soviet market has matured over the past decade.

What Has Changed?

For much of the 1970s Soviet grain imports fluctuated widely from year to year. Since the United States had two-thirds to three-fourths of this market, U.S. grain exports to Russia were vulnerable to these fluctuations.

Soviet grain production continues to fluctuate widely, but the impact on U.S. markets will diminish. The Soviets themselves are likely to do more to smooth their purchases by accumulating stabilization and emergency stocks in good crop years. As a result, their minimum annual grain imports may well have closed in on their maximum handling capacity. The Soviets are likely to purchase between 30 and 40 million tons of grain each year for the next several years.

Moreover, the United States is unlikely to recapture a three-fourths share of Soviet imports. Instead, the Soviets are likely to maintain a more diverse set of suppliers. Some of those other suppliers--Argentina and Australia, for example--are subject to crop fluctuations that could reduce their exportable supplies in a given year. But, the Soviets should be able to spread the shock of reduced supplies in one country across its other suppliers in a way that does not jolt any of them significantly.

In other words, in coming years the United States is likely to have a smaller share of a somewhat more stable, predictable Soviet grain market. This makes two aims of the old LTA--avoiding market disruption while exploiting market booms--relatively unimportant for the 1980s.

What sets the Soviet Union apart from other customers today is a lack of mutual trust. This inserts a high level of uncertainty into U.S.-Soviet relations of all sorts. The current level of suspicion and tension cannot be sustained. Either relations will deteriorate into sharper confrontation--which all of us wish to avoid--or they will begin to improve, but more slowly and cautiously than a decade ago.

There is in place a good foundation for building a healthier grain-trading relationship. This is the principle that agriculture will not again be singled out in an embargo. Though the practical significance of this in U.S.-Soviet trade may not be large today, it will grow as non-agricultural trade grows. And, the principle is important in rebutting uninformed demands for unsheathing the "food weapon."

The critical question now is whether both countries can build upon this foundation by replacing past trade confrontations with constructive, forward-looking actions. The United States has already taken an important first step. It resisted the temptation to

parcel out small quantities of additional purchase authority as rewards for favored Soviet actions. Instead, it offered 15 million tons of additional purchase authority under the sixth year of the LTA.

Many are now watching to see how the Soviet Union responds. Hopefully, it will reject the short-term strategy of holding aloof from the U.S. market. Instead, it should resume healthy purchases above the 8 million tons before it forces the United States to do something in neither country's interest--hold additional land out of grain production next year.

Negotiating a new LTA will be the next logical step in the evolution of U.S.-Soviet grain trade policy. Most observers agree that the United States and the Soviet Union need to maintain at least a consultative framework in grain and food trade. The consultations procedures of the current LTA, therefore, should be extended.

I think it should be an open question, however, whether a new agreement ought to contain additional, economic provisions--i.e., clauses on commodity coverage, quantities and the like. The economic risks and rewards addressed in the old LTA are largely irrelevant, and the current uncertainties in the U.S.-Soviet relationship are essentially political, not economic.

If economic provisions are regarded as important for restoring confidence and trade levels, a different approach from the old LTA should be considered. Under the old LTA, the government set the purchase level. If there is a new LTA, actual Soviet purchases should define future purchase levels. This would serve the grain trading interests of both countries, as it would build in powerful incentives for the Soviets to make regular, predictable, sizable grain purchases from the United States.

Such an arrangement could work this way. A "target" purchase level could be established for the LTA's first year--say 15 million tons of wheat and corn. A "trading range" around that target would also be established--say 75 percent to 150 percent of the target. Soviet grain purchases would have to fall within the trading range each year. After the first year of the LTA, the target and trading range would be adjusted based on a two-year moving average of actual Soviet purchases.

This "moving target" approach has several advantages. First, it would help restore the United States as a primary supplier to the Soviet Union, since low purchases in one year would drop the amount of grain Russia could purchase in a following year when its needs may be greater. Second, it would encourage the Soviets to accumulate reserve stocks and smooth out its purchases

by maintaining imports in good crop years and avoiding large import jumps in poor crop years.

Finally, it would lend predictability to U.S.-Soviet trade as everyone--farmers, traders, consumers and foreign customers--would know what the target and trading range were. Soviet purchases should gravitate toward the target, which could rise gradually over the years as Soviet needs increase.

Conclusion

The important point in all of this is that U.S.-Soviet trade relations must be built upon a realistic appraisal of this unique relationship. Better communication and cooperation in areas that serve the interests of both countries are needed.

A consultations process, therefore, is necessary in a new LTA. Economic provisions no longer are necessary. But, if they are desired, they should reinforce U.S. and Soviet interests in a stable, predictable, mutually beneficial trade pattern.

Presented at the USDA Agricultural Outlook Conference,

November 3, 1981

by

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Last year, when we met here, we were looking at a sharp drop in U.S. oilseeds production. Production of all major U.S. oilseeds was down sharply: soybean--down 21 percent in 1980 compared to 1979; cottonseed, down 23 percent; sunflowerseed, down 49 percent; and peanuts, down 42 percent. Oilseed prices were rising rapidly.

This year, the situation is almost exactly reversed. U.S. oilseed production recovered in 1981, and prices are down.

We are forecasting an almost across-the-board increase in exports of U.S. oilseeds and oilseed products in 1981/82, but with lower prices the total value of exports of our commodity group may only about equal 1980/81. Demand is weak, and the increase in exports (and in world consumption) will have to be bought with lower prices.

The balance between supply and demand comes together in the relationship of stocks and prices. Table 1 shows this relationship for soybeans and soybean products. (Most of my tables and discussion will emphasize soybeans because the soybean complex is dominate in both world and U.S. production and trade in oilseeds.)

Essentially, what has happened is that large world oilseed supplies--going back to the extremely large crops of 1979/80--have backed up in the form of soybean oil and soybean stocks--and, largely in the U.S. Soybean and soybean oil stocks increased sharply in 1979/80, and oil stocks were up again in 1980/81. In spite of lower prices and increased world consumption, we expect an increase in stocks of both soybeans and soybean oil again in 1981/82.

Large stocks of oil limited crush in 1980/81, and will again this year, but to a lesser degree. Soybean oil should be a little easier to move in 1981/82. Consumer inventories are down. Brazil's carryover of both beans and oil is lower this fall than last year--exports from the 1981 crop have moved earlier than from 1980. And, the increase in foreign oil equivalent production will be less in 1981/82 than in 1980/81. Nevertheless, there is a steady long-term pressure of world fats and oils supplies overhanging the market, which in the past two or three years has appeared to put a limit on world soybean crush and has forced the variation in world soybean supplies and crush to be absorbed by the meal component.

Now that I have given you my bottom line, let's look at how we got there. Table 2 shows world, U.S., and foreign production of total oilseeds and soybeans, and the potential meal and oil equivalent production of oilseeds plus related products such as fishmeal, palm oil, tallow and butter. Although the years are shown as 1978/79, 1979/80, etc., they do not relate to any single 12 month period, but are an addition of various local marketing years focused on the marketing year for U.S. soybeans. For example, the 1980 Brazilian soybean crop--harvested in the spring of the year--is included in 1979/80 world soybean production, and tree crop oils are calculated on a calendar year basis with production for the second year of the split analysis year included.

I have included 1978/79 in the table for comparison purposes as a more-or-less "normal" year. Production was about on trend for both world oil and meal production.

In 1979/80, there was a huge increase in world oilseed production--heavily concentrated in soybeans, and with about two-thirds of the soybean increase coming in the U.S. Since soybean production in South America was also up sharply in the spring of 1980, the impact of the large 1979/80 crop was spread over the entire year, and into 1980/81. Prices were down and stocks increased sharply.

In 1980/81, there was almost an exact reversal of the sharp production increase of 1979/80. World oilseed production fell 8 percent, with the 21 percent drop in the U.S. soybean crop almost equivalent to the total fall in world oilseed production. That is where we were a year ago at this time. The market was looking at the sharp drop in U.S. oilseed production, particularly soybeans, and prices were increasing sharply.

The market overreacted. The 1980/81 crop looked small only in comparison with the very large 1979/80 crop. There was a heavy stock carryover from 1979/80. 1980/81 production was only a little below trend. And, South America harvested another large soybean crop last spring.

In addition, several demand depressing factors came increasingly into play. Economies were weak around the world. Livestock feeding profitability was under pressure. Interest rates were up. And, the dollar appreciated for the major purchasers of soybeans. In the EC, dollar appreciation had a particularly depressing effect because it was reflected fully to final purchasers for soybeans and products, whereas, grain prices were held steady by the operation of the CAP.

Season average prices for beans and meal were up sharply, with a sharp rise in the fall followed by declines after the first of the year.

For 1981/82, we are looking at another reversal. World oilseeds production has recovered. Again, the fluctuation is largely in soybeans; and, largely in the U.S.

In one sense, the 1981/82 world crop is not large. It is only slightly above trend for meal and right on trend for oil. But, carryover stocks are again high, economies continue weak, and the livestock base is weak.

On the positive side, we do not expect the value of the dollar to increase again, and interest rates may come down some. And, 1981/82 production is still uncertain. The South American soybean crop is just now being planted.

We expect consumption to be up, but basically due to the pressure of supply, not stronger demand.

Table 3 is the same as Table 2, with production expressed as percentage changes from the year earlier.

Table 4 shows the U.S. share of world oilseeds, soybean, and meal and oil equivalent production. The U.S. accounts for nearly two-thirds of world soybean production, and since soybeans and products are the most important oilseed traded internationally, the U.S. is the primary factor in world oilseeds trade--particularly for protein. But, the U.S. crop is not the only factor--particularly for oil.

Now let's take a closer look at the soybean complex.

Table 5 shows world soybean supply, and meal and oil consumption.

Even though 1980/81 world soybean production was down 13 percent, world supplies were down only 4 percent and were still 15 percent greater than supplies in 1978/79. There was a relative shift in supplies in 1980/81 from the U.S. to Brazil and Argentina. The sharp increase in supplies in 1979/80 did not come all at once with the U.S. crop, but as a flow with the South American crop harvested in the spring of 1980. Similarly, the full market impact of the larger 1980 South American crop was not felt until 1980/81. Brazilian marketings were delayed, and were to some extent bunched with the, again large, 1981 South American crop--which has moved out rapidly.

This year, 1981/82, we do not expect another increase in South American supplies. All of the increase will be in the U.S.

Meal consumption was very strong in 1980/81 despite higher prices and the higher value of the dollar, but was declining through the year. 1980/81 consumption was down in the traditional markets of the U.S., EC, and Japan; but, up in the USSR, Brazil, and Mexico. Overall, 1980/81 was the first year in a long time not to show an increase in soybean meal consumption.

In 1981/82, we expect an increase in meal consumption in traditional as well as "new" markets. Meal prices are down and feeding profitability is improving. Interest rates and the value of the dollar are expected to be neutral to positive on demand. The increase at first will be primarily in higher feeding rates, but will increasingly be due to increases in the livestock base.

The increase shown for Eastern Europe is subject to question because of the financial problems of Poland.

Soybean oil consumption continued to increase in 1980/81 as beans were crushed in response to high meal prices. In 1981/82, consumption will increase as beans are crushed in response to the pressure of bean supplies.

Table 6 shows world soybean trade and crush. The trade data in the table are net of EC intra-trade. Brazil's trade is also shown on a net basis. Brazil has become a large importer in recent years to supply her excess crushing capacity--importing more than a million tons in 1980/81.

World soybean crush was down slightly in 1980/81 and world soybean trade dropped as crush shifted from the U.S. and the EC to Brazil. This shift in crush was facilitated by Brazilian policies which favor the domestic crushing industry and the export of products rather than beans.

In 1981/82, we expect stable South American supplies and, thus, the increase in product consumption will be met by increased crush in countries other than Brazil. As a result, world soybean trade will increase, with the increase in exports coming from the U.S. On the import side, imports into China and Mexico will be down because of larger domestic oilseed crops in those countries. The import estimate for the USSR may be low.

Table 7 shows the trade picture for soybean products. The data are shown net of EC intra-trade.

Soybean meal exports were up in 1980/81, with a shift in origin from the U.S. to Brazil. This reflected the large South American crop and Brazilian export policies. It also reflected the difficulty of marketing soybean oil in Europe, with one factor being a large EC rapeseed crop.

EC meal imports were up in 1980/81, partially offsetting the decline in bean imports, and the USSR emerged as a major meal market.

In 1981/82, we expect, as for soybeans, some reversal of the trade shift of 1980/81. World meal trade is expected to be down slightly, with a shift in origin from Brazil to the U.S. As pointed out earlier, the increase in East European imports is subject to question because of the problems in Poland.

World soybean oil trade was fairly flat in 1980/81 due to the pressure of competing oil sources. World oil importers are primarily LDCs, but these countries, too, have been affected by many of the negative demand factors which have affected demand for beans and meal.

As with meal, oil exports shifted from the U.S.--and the EC--to Brazil. On the import side, India is tightening its import policy for edible oils, and is taking increasing amounts of palm oil. The decline in the Middle East reflects competition from palm oil and the problems in Iran. The decline in Latin America is more apparent than real as the 1979/80 import number is inflated by unusual imports by Brazil. As with meal, the USSR is emerging as a major market for fats and oils.

Table 8 takes a closer look at the world vegetable oil situation and U.S. exports of vegetable oil and soybean oil.

As pointed out earlier, there is a steady long-term pressure of world fats and oils supplies overhanging the market. This pressure is coming not only from tree crop oils--palm and coconut--but from increasing production of high oil content oilseeds, particularly rapeseed and sunflowerseeds. Any world oversupply

of vegetable oils appears to back up as stocks of soybean oil and ultimately soybeans--and, primarily in the U.S.

World potential soybean oil production exceeded actual production in 1979/80, reflecting the buildup in soybean stocks. This situation is expected to recur in 1981/82, although not to the same extent.

The fact that the world's physical oil oversupplies are carried by soybean oil is also reflected in the U.S. export data. U.S. soybean oil exports were down 39 percent in 1980/81, but total U.S. vegetable oil exports were down only 13 percent. Exports of cottonseed oil, sunflowerseed oil, and even corn oil and peanut oil moved very well, and collectively were up 47 percent.

In the soybean oil sector, most of the decline was due to a sharp fall in exports to India whose market was taken by Brazil. Western Hemisphere markets, in particular, did quite well.

Let me conclude with a brief look at some other major U.S. oilseed sector export commodities.

Table 9 shows U.S. exports of sunflowerseed, sunflowerseed oil, cottonseed oil, and peanuts for marketing years 1979/80 and 1980/81 and current forecasts for 1981/82.

We expect sunflowerseed exports to be down in 1981/82 reflecting increased domestic crushing. Sunflowerseed oil exports are moving very well.

More than half of U.S. production of cottonseed oil is exported, and exports are forecast to increase more than 10 percent in 1981/82. Venezuela and Egypt are the major traditional markets for U.S. cottonseed oil, but exports are becoming increasingly diversified.

U.S. peanut production has recovered this year from last year's disaster. Exports in 1980/81 were cut by more than half from 1979/80. We expect exports to increase in 1981/82, but not to the levels of two years ago. Last year's

shortage and high prices brought new suppliers into the market and it will take several years for the U.S. industry to regain its position in the world peanut market.

Thank you.

Table 1

Soybeans and Products Stocks and Prices: 1978/79-1981/82

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>Stocks</u> ^{1/} (million metric tons)				
<u>World Soybeans</u>	9.8	18.2	16.4	19.0
U.S.	4.7	9.8	8.7	11.4
Brazil And Argentina	2.5	5.6	5.1	5.0
- - - - -				
<u>World Soybean Oil</u> (million metric tons)	.96	1.49	1.59	1.70
U.S.	.35	.55	.78	.81
Brazil	.27	.50	.40	.45
- - - - -				
World Soybean Stocks Expressed as months of crush	1.8	3.0	2.7	3.0
World Soybean Oil Stocks Expressed as months of consumption	1.0	1.5	1.5	1.5
- - - - -				
<u>Prices</u>				
U.S. Soybeans, farm, (\$/bu.)	6.66	6.23	7.61	6.25
Soybean Meal, Decatur, (\$/st.)	190	182	218	182
Soybean Oil, Decatur, (\$/st.)	27.4	24.3	22.7	22.0

^{1/} End of year.

Table 2

World and U.S. Oilseeds and Products Production 1/: 1978/79-1981/82
(In Million Metric Tons)

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
World Oilseeds <u>2/</u>	154.5	173.8	160.6	175.5
U.S. Oilseeds <u>3/</u>	58.7	72.7	56.0	67.1
Foreign Oilseeds <u>2/</u>	95.7	101.1	104.7	108.4
World Soybeans	77.4	93.7	81.3	90.7
U.S. Soybeans	50.9	61.7	48.8	57.3
Foreign Soybeans	26.5	32.0	32.5	33.4
World Meal Equivalent <u>4/</u>	83.3	95.7	85.9	94.3
U.S. Meal Equivalent <u>4/</u>	40.9	50.1	39.3	46.4
Foreign Meal Equivalent <u>4/</u>	42.4	45.6	46.6	47.9
World Oil Equivalent <u>5/</u>	54.7	59.0	56.9	59.4
U.S. Oil Equivalent <u>5/</u>	14.5	17.5	14.3	16.1
Foreign Oil Equivalent <u>5/</u>	40.3	41.6	42.6	43.3

1/ Estimates at mid-October, 1981.

2/ Soybeans, cottonseed, peanuts, sunflowerseed, rapeseed, sesameseed, safflowerseed, flaxseed, castorbeans, copra, palm kernel.

3/ Soybeans, cottonseed, peanuts, sunflowerseed, safflowerseed, flaxseed.

4/ 44 percent protein equivalent of oilseeds plus fish meal.

5/ Fat content of oilseeds plus marine oils and animal fats.

Table 3

World and U.S. Oilseeds and Products Production 1/: 1978/79-1981/82
(Percent Change from Year Earlier)

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
World Oilseeds <u>2/</u>	+ 5	+ 13	- 8	+ 9
U.S. Oilseeds <u>3/</u>	+ 4	+ 24	- 23	+ 20
Foreign Oilseeds <u>2/</u>	+ 6	+ 6	+ 4	+ 4
World Soybeans	+ 7	+ 21	- 13	+ 12
U.S. Soybeans	+ 6	+ 21	- 21	+ 18
Foreign Soybeans	+ 11	+ 20	+ 2	+ 3
World Meal Equivalent <u>4/</u>	+ 6	+ 15	- 10	+ 10
U.S. Meal Equivalent <u>4/</u>	+ 4	+ 22	- 22	+ 18
Foreign Meal Equivalent <u>4/</u>	+ 8	+ 8	+ 2	+ 3
World Oil Equivalent <u>5/</u>	+ 5	+ 8	- 4	+ 4
U.S. Oil Equivalent <u>5/</u>	+ 4	+ 21	- 18	+ 13
Foreign Oil Equivalent <u>5/</u>	+ 5	+ 3	+ 2	+ 2

1/ Estimates at mid-October, 1981.

2/ Soybeans, cottonseed, peanuts, sunflowerseed, rapeseed, sesameseed, safflowerseed, flaxseed, castorbeans, copra, palm kernel.

3/ Soybeans, cottonseed, peanuts, sunflowerseed, safflowerseed, flaxseed.

4/ 44 percent protein equivalent of oilseeds plus fish meal.

5/ Fat content of oilseeds plus marine oils and animal fats.

Table 4

U.S. Share of World Oilseeds and Products Production: 1978/79-1981/82
(In Percent)

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
Oilseeds	38	42	35	38
Soybeans	66	66	60	63
Meal Equivalent	49	52	46	49
Oil Equivalent	27	30	25	27

Table 5

Soybean Supply and Product Use, World-Selected Countries: 1978/79-1981/82
(In Million Metric Tons)

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>Soybean Supply</u>				
World	36.3	103.5	99.5	107.1
U.S.	55.2	66.5	58.5	66.0
Brazil and Argentina	17.3	21.3	24.7	24.6
<u>Meal Consumption</u>				
World	52.8	57.5	56.3	59.5
U.S.	16.1	17.5	15.8	16.6
Foreign	36.7	40.0	40.5	42.9
EC	14.5	15.0	14.5	15.0
Japan	2.9	3.0	2.9	3.0
Eastern Europe	4.4	5.0	4.9	5.3
USSR	1.2	1.4	2.2	2.8
Mexico	.8	1.1	1.3	1.4
Brazil	1.8	2.3	2.6	2.8
<u>Oil Consumption</u>				
World	11.5	12.2	12.5	13.2
U.S.	4.1	4.1	4.1	4.3
Foreign	7.4	8.2	8.4	8.9
EC	1.6	1.6	1.5	1.6
Brazil	1.2	1.4	1.5	1.6
India	.6	.7	.7	.8
Eastern Europe	.3	.4	.5	.4
USSR	.3	.3	.4	.5
<u>Decatur Prices</u>				
Soybean Meal, 44%, (\$/st.)	190	182	218	182
Soybean Oil, Crude (¢/lb.)	27.4	24.3	22.7	22.0

Table 6

Soybean Trade and Crush, World and Selected Countries: 1978/79-1981/82
(In Million Metric Tons)

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>World Exports</u> <u>1/</u>	24.1	27.8	24.4	27.5
U.S.	20.1	23.8	19.7	22.9
Brazil <u>2/</u>	.4	.9	.8	.5
Argentina	2.8	2.3	3.0	3.1
<u>Selected Imports</u>				
EC <u>2/</u>	11.7	11.8	10.6	11.4
Japan	4.1	4.4	4.1	4.2
Spain	2.2	3.2	2.8	3.2
USSR	1.8	1.1	1.3	1.5
China	.3	.8	.5	.4
Mexico	.6	.8	1.3	1.1
<u>World Crush</u>	66.6	72.1	71.7	75.6
U.S.	27.7	30.6	27.8	29.4
EC	11.5	11.3	10.3	11.1
Brazil	9.6	10.6	13.9	14.0

<u>Farm Price</u>				
U.S. Soybeans (\$/bu.)	6.66	6.28	7.61	6.25

1/ Net of EC Trade.

2/ Net.

Table 7

Soybean Product Trade, World and Selected Countries, 1978/79-1981/82
(In Million Metric Tons)

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>World Soybean Meal Exports 1/</u>	12.4	13.7	15.9	15.6
U.S.	6.0	7.2	6.3	6.6
Brazil	5.4	5.5	8.6	7.8
<u>Selected Soybean Meal Imports</u>				
EC 2/	5.3	5.8	6.2	6.2
Spain	.4	.1	--	--
Eastern Europe	3.5	3.9	3.9	4.2
USSR	.1	.5	1.2	1.5

<u>World Soybean Oil Exports 1/</u>	2.5	2.8	2.9	3.1
U.S.	1.1	1.2	.7	1.0
Brazil	.6	.5	1.2	.9
EC 2/	.5	.4	.3	.4
Spain	.3	.4	.4	.5
<u>Selected Soybean Oil Imports</u>				
India	.56	.69	.62	.69
Pakistan	.26	.21	.26	.26
Mid-East	.54	.64	.57	.64
Latin America	.33	.50	.41	.51
USSR	.02	.05	.20	.20

1/ Net of EC trade.

2/ Net.

Table 8

Vegetable Oil Situation: 1978/79-1981/82
(In Million Metric Tons)

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>World Oil Equivalent Production</u>	54.7	59.0	56.9	59.4
Other than Soybean	43.0	44.6	44.6	45.6
Potential Soybean	11.7	14.4	12.3	13.8
Actual Soybean	11.9	12.7	12.8	13.4
<u>Competing Oil Crops</u>				
World Palm Oil	4.3	4.8	5.0	5.4
World Coconut Oil	2.8	3.0	3.3	3.4
Canada Rapeseed	3.5	3.4	2.5	1.8
EC Rapeseed	1.2	1.2	2.0	2.1
Argentine Sunflowerseed	1.4	1.6	1.3	1.6
U.S. Sunflowerseed	1.8	3.5	1.8	2.1
<u>U.S. Vegetable Oil Exports</u>				
Total		1.816	1.577	
Soybean		1.220	.739	
Cottonseed		.330	.322	
Sunflowerseed		.086	.301	
Corn		.064	.082	
Peanut		.009	.025	
<u>U.S. Soybean Oil Exports to Major Markets</u>				
Brazil		.076	0	
Other South America		.179	.220	
North America		.133	.121	
India		.428	.062	
Pakistan		.147	.126	
China		.100	.026	
Eastern Europe		.004	.042	
USSR		.025	0	

Table 9

U.S. Exports of Sunflowerseed, Sunflowerseed Oil, Cottonseed Oil,
and Peanuts: Marketing Years 1979/80-1981/82

(In Thousand Metric Tons)

<u>Sunflowerseed</u> (Sept.-Aug.)	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
Production	3,484	1,786	2,145
Exports	1,821	1,505	1,400
EC	1,247	945	
Portugal	221	225	
Mexico	198	272	
<u>Sunflowerseed Oil</u> (Oct.-Sept.)			
Production	224	281	360
Exports	86	301	300
EC	4	62	
Venezuela	33	89	
Algeria	12	80	
Egypt	10	43	
<u>Cottonseed Oil</u> (Oct.-Sept.)			
Production	645	562	624
Exports	330	322	367
Venezuela	72	109	
Egypt	157	76	
Japan	23	40	
Dominican Republic	28	33	
<u>Peanuts</u> (Aug.-July)			
Production (In-shell)	1,800	1,047	1,757
Exports (Shelled basis)	360	172	238
EC	204	101	
Canada	65	31	
Japan	30	13	

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The 1981/82 U.S. oilseeds outlook is dominated by larger supplies and lower prices particularly for soybeans which account for 85 percent of our oilseed output. Total oilseed production is forecast at 67 million metric tons, nearly 20 percent above 1980. Although domestic use and exports of oilseeds are both expected to rise this season, the increase will fall far short of the change in supplies. Consequently, stocks will build and inflation-adjusted prices of oilseeds and products will on average fall to their lowest levels in several years. Given prospects for weak economic growth in 1982, adjustments to bring oilseed stock/use ratios and real prices to more normal levels need to come from the supply side. In this regard, however, prices of crops competing with soybeans are also falling sharply. Thus, unless poor cropping conditions develop next year, real prices of oilseeds may be depressed beyond 1981/82.

The Outlook for Soybeans - Supply

Acreage - Planted soybean acreage in 1981 was 68.1 million, 2 million below that planted in 1980. This decline resulted from lower soybean prices relative to corn, cotton, and rice. Wet fields in sections of the corn belt caused some producers to replace intended corn acreage with soybeans. Otherwise, the drop in soybean acreage might have been more substantial as the soybean/corn price ratio only averaged about 2.1 to 1 during the late winter and early spring, compared to a ratio of about 2.4 to 1 during the same months of 1980 (figure 1).

It is interesting to note that a record 15 percent of 1981 soybean acreage was double cropped. Sharply higher winter wheat acreage in the South permitted this record to be attained. For example, in Arkansas, Mississippi, and Louisiana, single-crop soybean acreage fell from 11.1 million acres in 1980 to 10 million in 1981, but double-cropped acreage jumped 19 percent, to 1.35 million (figure 2). In these states winter wheat acreage more than doubled from 1980 to 1981.

It is also worth noting, with reference to figure 1, that the sharp expansion in soybean acreage in the 11 states of the eastern and western cornbelt from 1975 to 1981 was accompanied by a steady upward trend in corn acreage. This was true even in 1977 when soybean prices rose sharply relative to corn. Additions to cropland and declining oats acreage have allowed both corn and soybean acreage to trend up in this region. What we are likely to see in future years, however, is more intense competition between corn and soybeans in the cornbelt as additions to total cropland become increasingly costly and with oats acreage at an already low level, historically. Thus, the soybean/corn price ratio---ultimately, relative demand strength for the two crops---is likely

to be more highly correlated with changes in soybean and corn acreage in the coming years.

It cost U.S. farmers more to produce soybeans in 1981 as nonland costs per planted acre rose to \$150, up from \$131 in 1980 and \$115 in 1979. On a per-bushel basis, costs declined slightly from 1980 as yields are an estimated 19 percent higher. Costs per bushel are estimated at about \$4.85 for 1981.

Production - Based on conditions as of October 1, U.S. soybean production is forecast at 2.1 billion bushels, 18 percent above 1980. Harvested acreage in 1981 at 66.9 million is one million below last year but forecast yields of 31.5 bushels per harvested acre are 19 percent higher.

Historical differences between the October forecasts and final estimates indicate that the odds are 2 out of 3 that production will be within 75 million bushels of the October 1 forecast. A deviation of 75 million bushels from the current forecast could cause a change of 40-50 cents a bushel in the season-average soybean price.

With beginning stocks of 320 million bushels, soybean supplies for 1981/82 are placed at 2.43 billion bushels, 13 percent above 1980/81, and only marginally below the record supplies of 1979/80.

Demand - This season's larger supplies and lower prices are expected to cause total use of soybeans to increase to 2 billion bushels, nearly 10 percent above 1980/81. Weak economic growth, high interest rates, a flat livestock sector, and the strong U.S. dollar will moderate increases in total use. Thus, the gain in use is more in response to lower prices than to factors which underlie shifts in the demand curve for soybeans.

Domestic Soybean Meal Use - Domestic use of soybean meal is expected to increase nearly 6 percent in 1981/82 to 18.4 million short tons. This increase is based on anticipated higher feeding rates per livestock unit and a slightly lower meal/corn price ratio.

The number of protein-consuming animal units (PCAU's) are forecast to be unchanged to slightly higher in 1981/82 as increases in poultry and other livestock sectors are about offsetting a contraction in pork production. The poultry and hog sectors account for about 40 percent and 30 percent, respectively, of protein meal use in the United States. During the 1981/82 feeding year pork production could be down 6 to 7 percent while broiler output increases by 2 to 3 percent (figure 3).

The primary reason for forecast higher meal use are anticipated increases in the pork/meal and broiler/meal price ratios. These changes should encourage producers to raise feeding rates per animal unit. Research has shown that for each 10 percent increase in livestock prices (indexed) and for each 10 percent reduction in soybean meal price, meal use increases by about 4 percent and 2 percent, respectively. If current price forecasts are realized, the pork/meal price ratio would be 5.4 to one in 1981/82, about a third above last season, while the broiler/meal price ratio would be about a fifth higher.

Domestic Soybean Oil Use - The domestic market accounts for about three-fourths of total soybean oil use. Most of the soybean oil goes into the edible

oils market. In recent years this market has experienced an annual growth rate of about 3 percent, roughly in line with increases in population and real income. As figure 4 indicates, domestic use of soybean oil is highly related to overall economic activity. There is estimated to be nearly a one-to-one correspondence between percentage changes in domestic oil use and in real incomes. Here, however, soybean oil use is expected to receive little or no boost in 1981/82. Other factors affecting soybean oil use include the prices of soybean and competing oils such as imported palm and coconut oil, and domestically produced corn, cottonseed, and peanut oil. Primarily then, on the basis of this season's low soybean oil prices relative to other oils, we expect soybean oil use to be 9.5 billion pounds, 4 percent above 1980/81. A pickup in domestic use is already occurring--in July-August, domestic use was a fourth above the year-earlier level.

Export Demand for Soybeans and Products - Current forecasts indicate that the United States will increase its share of world soybean trade, regaining some of the market lost last year, when our share of world soybean production fell. In 1981/82, the U.S. share may reach nearly 80 percent of world soybean exports, up from 76 percent in 1980/81. The U.S. share of world soybean production in 1981/82 is forecast at 63 percent, up from 60 percent last season (figure 5).

The most significant change in 1980/81 trade was the drop in the U.S. share of world soybean oil exports--declining from 37 percent in 1979/80 to 20 percent in 1980/81. This decline was way out of line with the decline in our share of world oil production. In contrast, Brazil's share rose to 35 percent, up from 16 percent the previous year. This increase resulted from an aggressive marketing program, which helped Brazil to capture much of the Indian market, traditionally the largest U.S. soybean oil market.

U.S. soybean exports are forecast at 840 million bushels in 1981/82, 16 percent above 1980/81. Soybean crushings outside the U.S. are projected to increase 6 percent with most of the increase in the European Community (EC), Eastern Europe, and the Soviet Union.

Difficult economic conditions in the EC last year, including high interest rates, slow livestock expansion, and poor crushing margins, limited use. Prices of soybeans in European currencies rose almost 40 percent because of the strong U.S. dollar combined with higher soybean prices. However, European crushing margins are improving as soybean prices decline. This should stimulate crushing activity.

The Soviet Union may have to import more soybeans to augment short supplies of feedstuffs resulting from a production shortfall of coarse grains and oilseeds in that country. In addition to expanding import requirements in these locations, the United States will experience less competition from producers in the Southern Hemisphere, at least during the first half of the U.S. marketing year. The level of U.S. exports during the second half of the season will be partly determined by the size of the South American crop that is now being planted, and Brazilian trade policy.

U.S. exports of soybean oil are projected to rise to 2.25 billion pounds, 41 percent above 1980/81. Brazil, the major foreign competitor, has been aggressively exporting oil since March, in contrast with the preceeding season when

marketings were distributed more evenly throughout the year. With large quantities of Brazilian oil already exported and much of the remaining exportable supplies committed, the U.S. will be the principal world supplier until April 1982. During this period, the U.S. is expected to recapture at least some of the Indian market lost to Brazil last season. In addition, U.S. soybean oil prices are projected to be low relative to other oils.

For many of the reasons noted above, U.S. exports of soybean meal are expected to be higher in 1981/82---7.3 million tons, compared to 6.9 million last season.

Domestic Crush - Domestic crush of soybeans is forecast at 1.08 billion bushels in 1981/82, up from 1.02 billion last seasons. Even though the total value of meal and oil is declining, this season's lower soybean prices will cause the crushing margin to increase to a more normal level, compared to last season's average margin of about 21 cents a bushel (figure 8). Last season's crushings represented only 75 percent of capacity, about 5 percentage points below the long-term average rate.

Stocks and Prices - This season's crush is expected to yield 11.8 billion pounds of oil and 25.7 million short tons of meal. As a result, and given our forecast of total use, soybean oil stocks next October 1, are expected to be 1.8 billion pounds, 4 percent above the 1980/81 carryout which was considered to be excessively large. Oil prices could slide further from already depressed levels, averaging in the range of 20 to 24 cents a pound in 1981/82. Real prices of oil will be at historic low levels. Soybean meal ending stocks are also forecast to increase, to 270,000 tons on October 1, 1982, up from 250,000 tons this fall. Meal prices are expected to average in the range of \$170 to \$195 a ton, well below the 1980/81 average of \$218.

Soybean Prices - Our forecasts of soybean production and use for 1981/82 imply a record-high carryover of 420 million bushels on September 1, 1982, up from the 1980/81 carryover of 320 million bushels. If realized, this season's carryover would be 21 percent of total use. The stocks-to-use ratio was 17 percent in both 1980/81 and 1979/80. During 1976/77-1978/79, the stocks-to-use ratio was below 10 percent.

Primarily as a result of this season's increase in supply and declining oil and meal prices, soybean prices are forecast to fall sharply. At the farm, prices are expected to average in the range of \$5.50 to \$7.00 a bushel, down from the 1980/81 average of \$7.61. By mid-September, farm prices had already dropped under \$6.30. In real terms, soybean prices could drop to their pre-1971/72 levels before the rapid expansion in foreign demand brought about substantial increases in commodity prices.

The larger corn crop in the U.S. and consequently, lower corn prices will also tend to hold soybean prices down (figure 6). Probably because of the extraordinary weakness in the oil market, soybean prices relative to corn are expected to fall again in 1981/82. The relationship presented in figure 6 also indicates that a corn crop larger (or smaller) than currently forecast could cause soybean prices to average lower (or higher) this season. A 100 million bushel change in the corn crop from the October forecast (the odds of this happening are higher than 1 out of 3), could cause the season-average soybean price to change by 10 to 20 cents a bushel.

Except in years of a below-normal crop, soybean prices tend to rise throughout the crop year. As figure 7 indicates, monthly high prices most often occur in the last quarter of the marketing year while low prices most often occur in the first quarter. Two exceptions to this generalization were 1974/75 and 1980/81, when the pattern was exactly reversed.

During the past decade--eliminating 1974/75 and 1980/81--average prices received during the last quarter have tended to be about 14 percent above the first quarter average. If the pattern holds this season, soybean cash prices next summer could average around \$7 a bushel.

With grain and cotton prices also falling sharply in 1981/82, only minor adjustments in soybean acreage are likely next spring. So, given the outlook for the livestock sector and overall economic activity, real soybean prices could be depressed again next fall in the absence of bad weather in 1982.

OUTLOOK '82



Table 1. U.S. SOYBEANS AND PRODUCTS 1/

Commodity	:	1979/80	:	1980/81	:	1981/82 Projections
	:		:	Estimated	:	

	:					
SOYBEANS	:					
	:			Million acres		
Area	:					
Planted	:	71.6		70.1		68.1
Harvested	:	70.6		67.9		66.9
	:			Bushels/acre		
Yield per harvest	:	32.1		26.4		31.5
	:			Million bushels		
Beginning stocks	:	174		359		320
Production	:	2,268		1,792		2,107
Supply, total	:	2,442		2,151		2,427
Crushings	:	1,123		1,020		1,080
Exports	:	875		724		840
Seed and feed	:	68		66		70
Residual	:	17		21		17
Use, total	:	2,083		1,831		2,007
Ending stocks	:	359		320		420
Avg. farm price	:	6.28		7.61		5.50-7.00
	:					
SOYBEAN OIL	:					
	:			Million pounds		
Beginning stocks	:	776		1,210		1,725
Production	:	12,105		11,165 <u>2/</u>		11,770
Supply, total	:	12,881		12,375		13,495
Domestic	:	8,981		9,050		9,450
Exports	:	2,690		1,600		2,250
Use, total	:	11,671		10,650		11,700
Ending stocks	:	1,210		1,725		1,795
Avg. price <u>3/</u>	:	24.3		22.7		20.0-24.0
	:					
SOYBEAN MEAL	:					
	:			Thousand short tons		
Beginning stocks	:	267		226		250
Production	:	27,105		24,309 <u>2/</u>		25,700
Supply, total	:	27,372		24,535		25,950
Domestic	:	19,238		17,385		18,350
Exports	:	7,908		6,900		7,330
Use, total	:	27,146		24,285		25,680
Ending stocks	:	226		250		270
Avg. price <u>4/</u>	:	181.90		218.20		170-195

1/ Marketing year beginning September 1 for soybeans; October 1 for soybean oil and meal. 2/ Based on an October year crush of 1,015 million bushels. 3/ Simple average of crude soybean oil, Decatur, cents per pound. 4/ Simple average of 44% protein, Decatur, dollars per short ton.

The Outlook for Other Oilseeds

Cottonseed - U.S. production of cottonseed in 1981/82 is projected to reach a record 6.2 million short tons because of an increase in the cotton crop and a return to a more normal lint-to-seed ratio. In spite of a very small carryin--only .4 million short tons--total supplies will be a record-large 6.6 million. The 1981/82 carryout could be around 1.2 million tons.

Prices received by farmers for cottonseed during August-September averaged \$105.5 a ton, \$10.00 below the average for the same 2 months in 1980. Because of the record supply, the season-average price received by farmers is forecast to drop 12 percent to \$110.00 a short ton.

Cottonseed oil supplies in 1981/82 are estimated at about 1.5 billion pounds, 7 percent above last year's 1.4 billion. Domestic disappearance of oil is likely to increase only slightly because of stiff competition from other domestic oils, such as soybean and sunflower, which are also in ample supply.

Over half of the cottonseed oil supplies this season will be exported. As in recent years, principle buyers are expected to be Egypt, and Venezuela--markets where cottonseed is a preferred oil.

Because of its stature as a preferred oil, cottonseed oil prices will continue to command a premium over soybean oil. This year the premium may be about 2 cents a pound.

Sunflowerseed - Sunflower acreage planted in the four major sunflower-producing States of North Dakota, South Dakota, Minnesota, and Texas in 1981 was 4 million acres, approximately the same as in 1980. Indications are that approximately 3.9 million acres will be harvested in the four surveyed States with total U.S. acreage estimated at 4.1 million. The average yield is expected to be 1,148 pounds an acre. Based on these figures, 1981 sunflower production is estimated at 4.7 billion pounds, up from 3.9 billion last year.

Sunflower crushings in the United States during 1980/81 were a record 1.6 billion pounds, about one-third more than 1979/80. This was partly due to the expansion in crushing capacity that came on stream last fall. Since additional U.S. sunflower crushing capacity is also slated for this coming season, it is expected that there will be another large increase in sunflower seed crushings, possibly reaching 2 billion pounds in 1981/82. With additional promotion, domestic use is expected to increase considerably in 1981/82.

World demand for U.S. sunflower oil expanded sharply in 1980/81. Exports increased from 190 million pounds in 1979/80 to an estimated 640 million pounds in 1980/81. The strong showing in sunflowerseed oil exports, in part, reflects the shift to more domestic crush and a reduction in the exports of sunflowerseed. Major markets for sunflower oil in 1980/81 were Venezuela, Algeria, the Netherlands, and Egypt. Exports are expected to continue to rise in 1981/82 to 660 million pounds.

Even though domestic crushing of sunflowerseed is rising, the bulk of U.S. production is exported. U.S. sunflowerseed exports in 1980/81 were 3.3 billion pounds, down from 4 billion last year. The reduced exports were primarily caused by smaller purchases by West Germany and Italy. Exports in 1981/82

could be around 3.1 billion pounds.

The average price received by farmers for sunflowers in 1980/81 was \$10.67 per cwt, up from \$8.92 in 1979/80. The average price received in September was \$10.00 per cwt, slightly above a year ago. The early October price of sunflower oil (crude, Minneapolis) was around 24.5 cents a pound, down from 28 cents, its mid-year peak. Due to the relatively short world supply of premium oils, sunflower oil is selling at about a 5-cent-a-pound premium over soybean oil. With the prospects for excellent cotton and sunflower crops in the United States and the increased supply of these oils, the premium of sunflower oil over soybean oil may narrow.

Peanuts - U.S. peanut production as of October 1 is forecast at 3.87 billion pounds, (farmers' stock basis), a sharp recovery from the drought-reduced crop last season and just 2 percent short of the 1979 record-large outturn. The indicated yield per acre of 2,524 pounds is over 50 percent above 1980. Peanut acreage for harvest this year is a record 1.53 million acres.

U.S. use of peanuts for food was off 19 percent in 1980/81 (August-July) because of short supply, but is expected to increase in 1981/82. Peanut crushings also fell in the past season but are likely to rise this year with the larger supplies, to 530 million pounds. Similarly, peanuts available for export will rise but are not expected to reach the level of 1979/80. Many growers have contracted a portion of their crop at premiums above the support levels, but the large outturn means a considerable share of the crop will sell close to support. Farm prices for 1981/82 could average around 23.7 cents a pound, slightly below 1980/81.

The U.S. Senate passed the 1981 farm bill, S. 884, on September 18, 1981, with some major changes affecting peanut program. Acreage allotments were eliminated, and the marketing quota was reduced to 1.24 million tons. Minimum support for quota peanuts is set at \$596 a ton for 1982, with cost-of-production adjustments for the 1983-85 crops. The House of Representatives voted on the peanut title of the 1981 farm bill, H.R. 3603, on October 15, 1981. Provisions were passed which would eliminate allotments and poundage quotas. Price support would be available at a level determined by the Secretary.

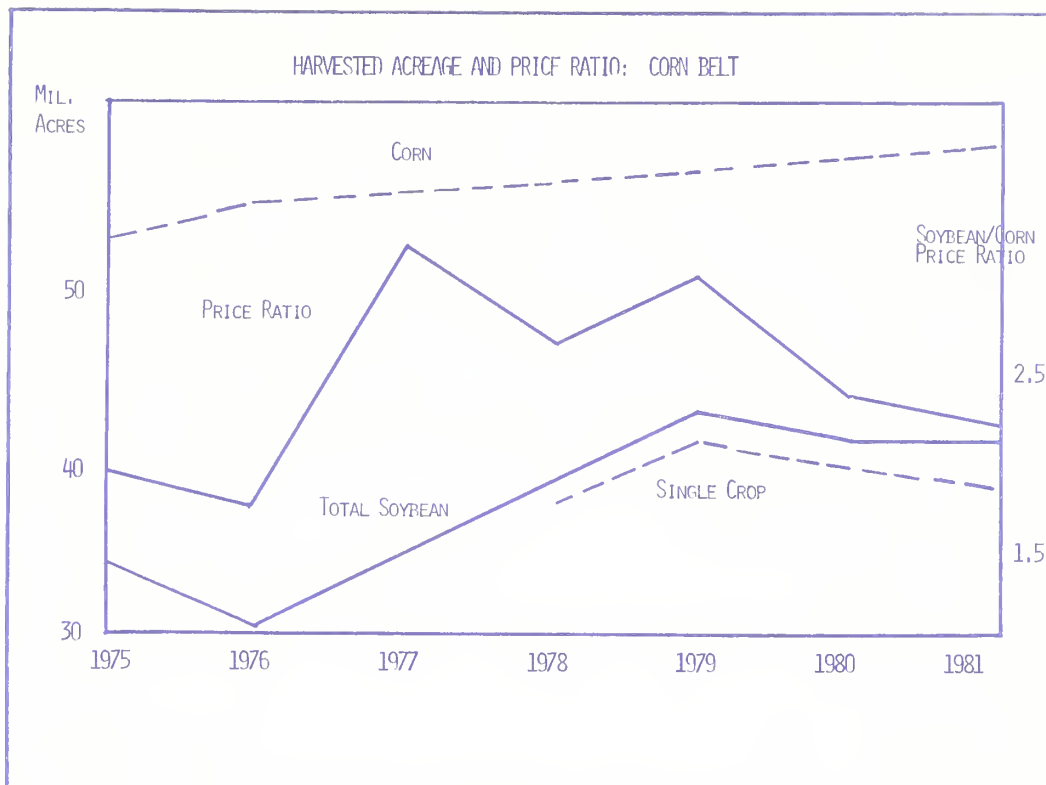


FIGURE 1

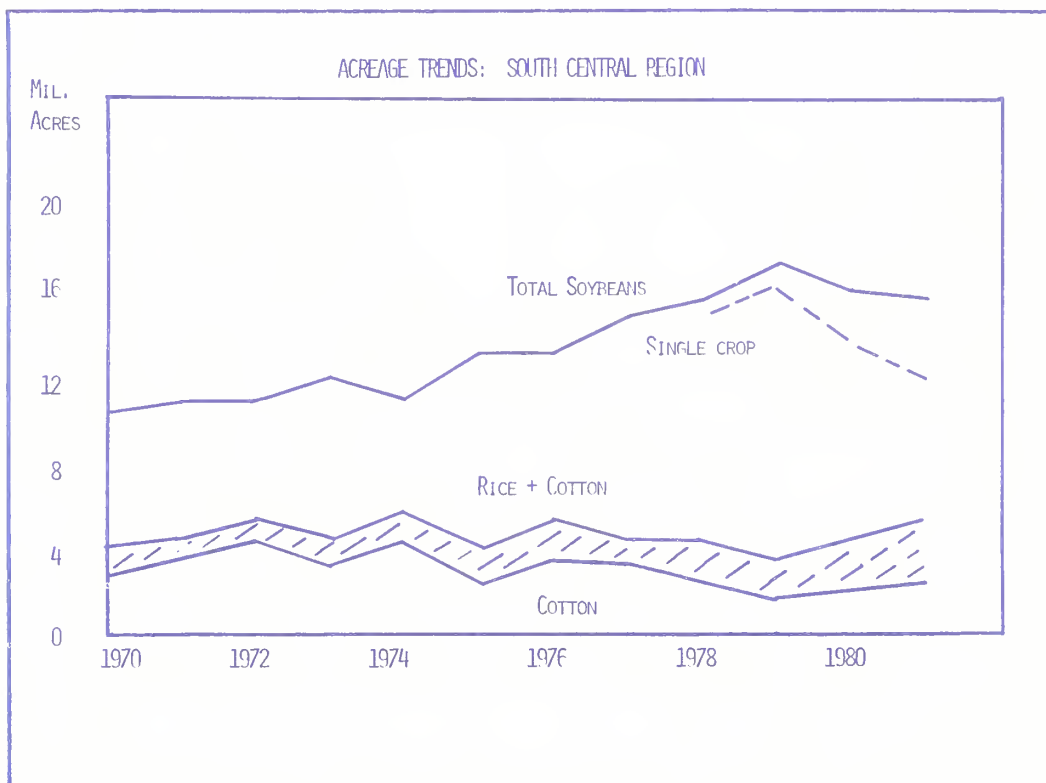


FIGURE 2

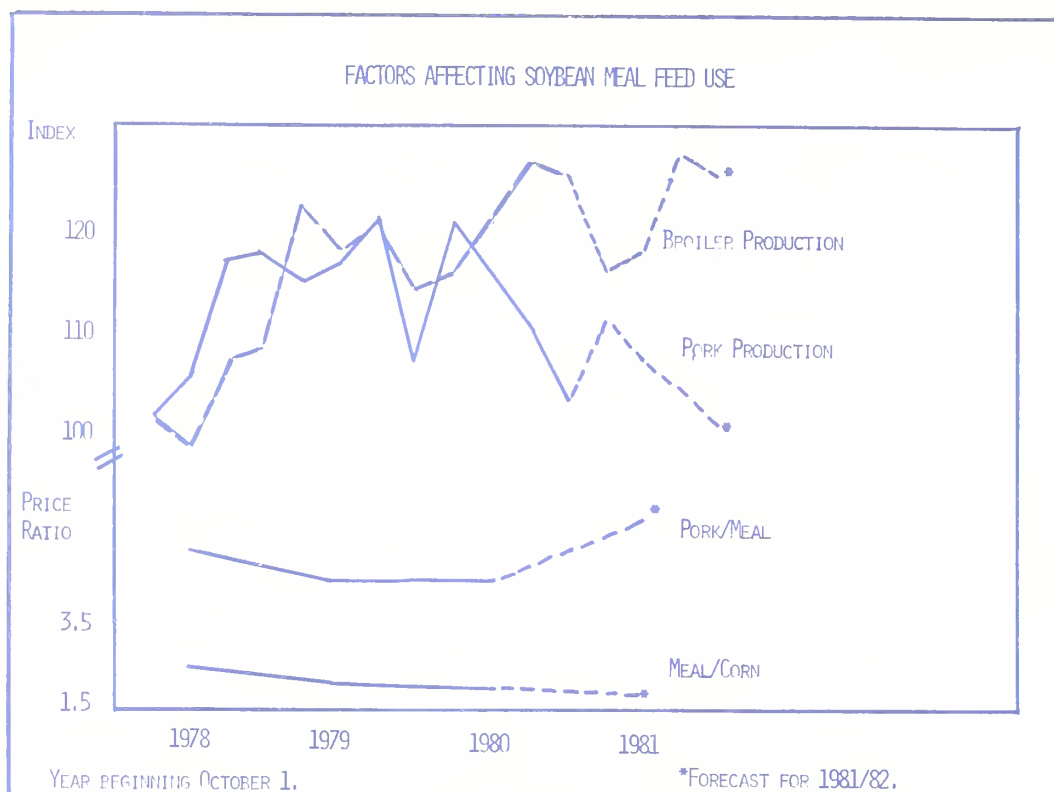


FIGURE 3

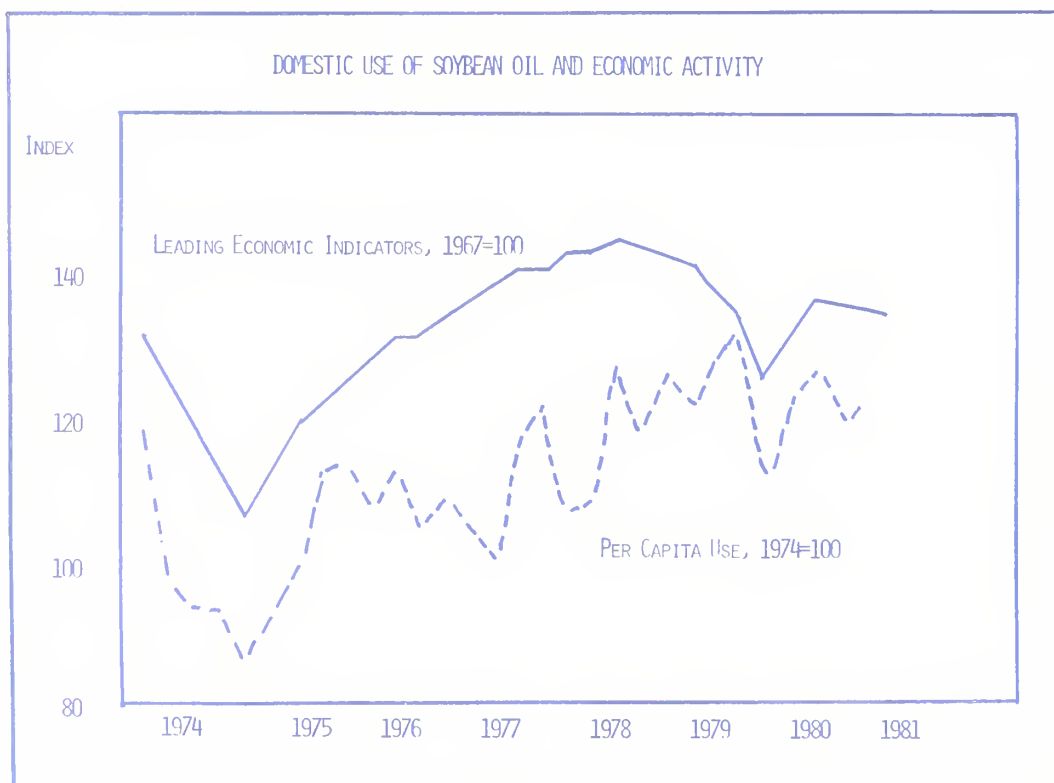


FIGURE 4

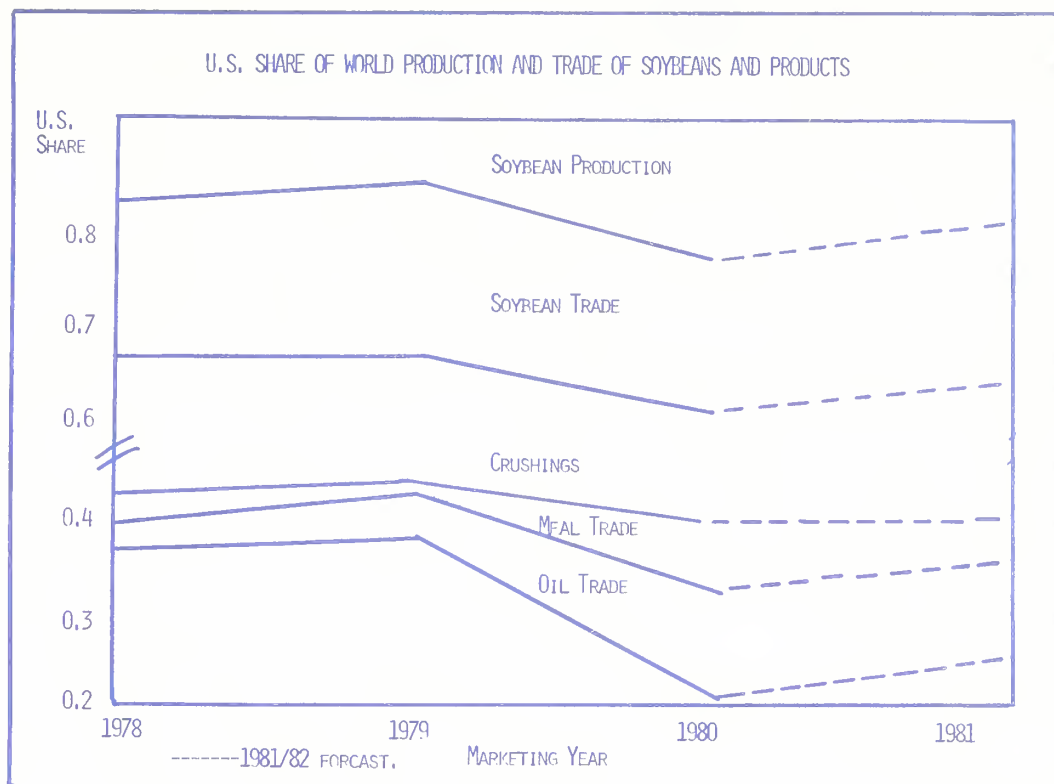


FIGURE 5

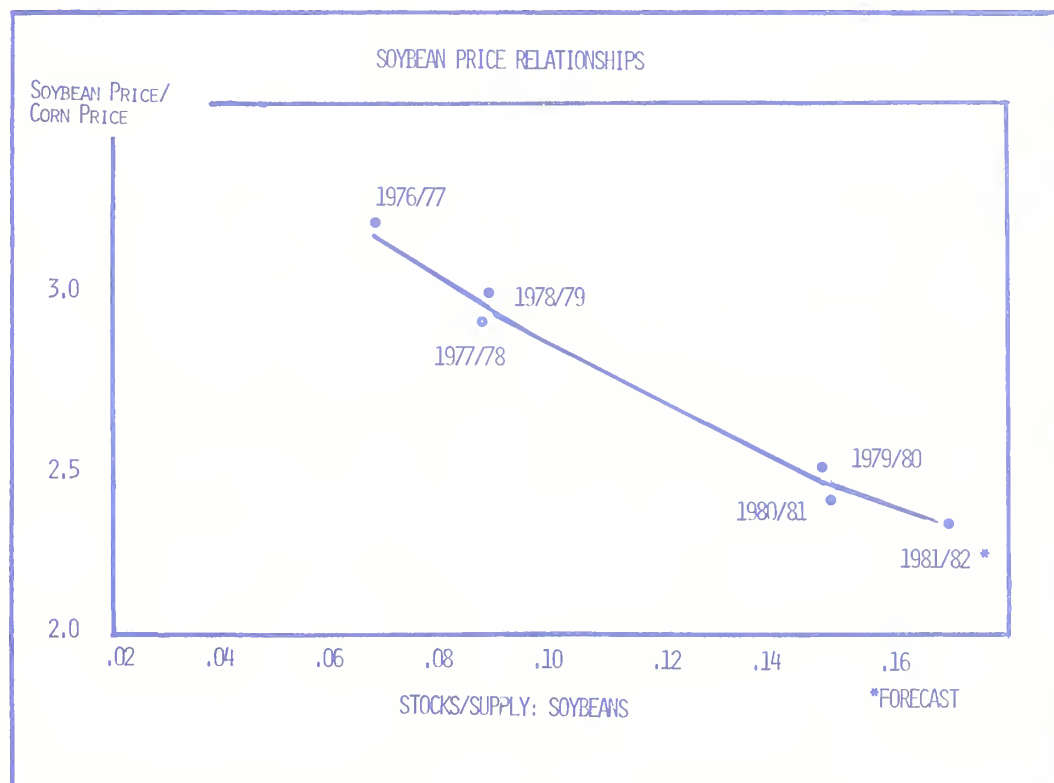


FIGURE 6

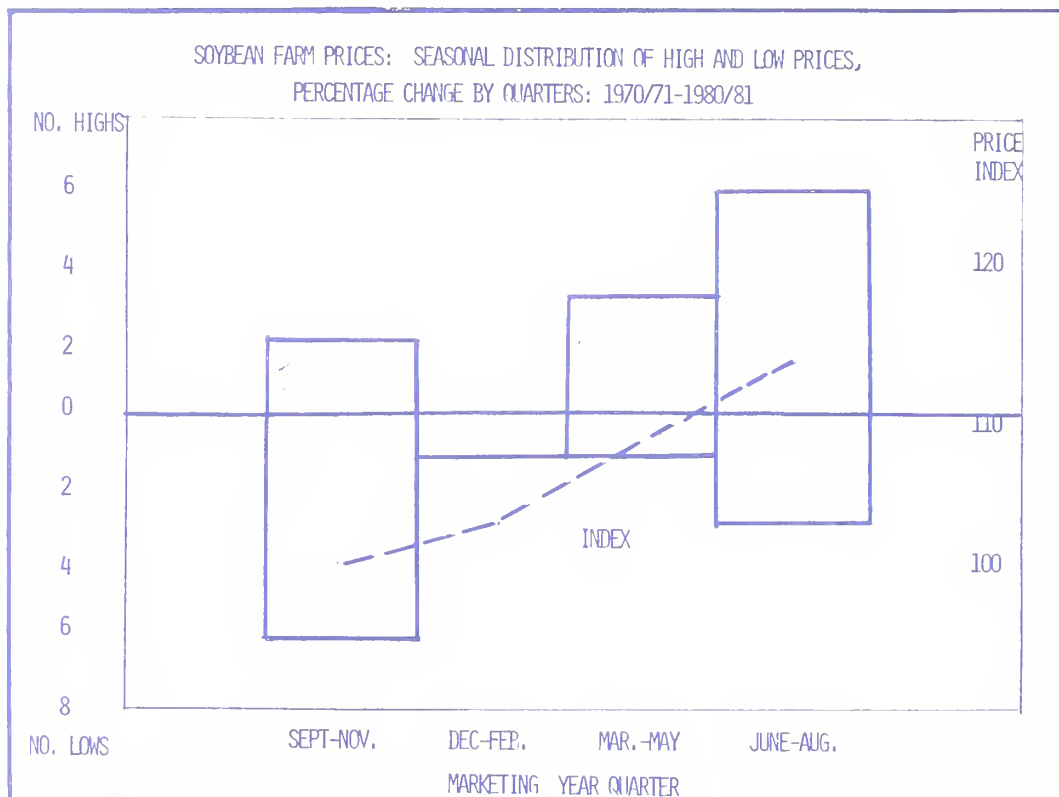


FIGURE 7



FIGURE 8

WORLD OUTLOOK FOR SUGAR AND TROPICAL PRODUCTS

Alvin E. Gilbert, Foreign Agricultural Service

1982 Agricultural Outlook Conference, Session #13
Washington, D.C.

Tuesday, November 3, 1981

INTRODUCTION

From a production point of view this will be a big year for the commodities I represent. Our first estimate of 1981/82 world sugar production puts the crop at 95.8 million metric tons, a record, and up 10 percent from 1980/81. Our estimate of 1981/82 coffee production puts output at 95.6 million bags, up almost 15 percent from 1980/81. This would also be a record. Much of the increase in coffee will be in Brazil where large scale plantings made after the destructive frost of 1975 are now coming into full production. Cocoa production in 1981/82 is forecast at a record 1.73 million metric tons, up 4 percent from the bumper 1980/81 outturn. Large scale new plantings coming into bearing and young trees increasing in productivity in the Ivory Coast, Malaysia and Brazil are largely responsible for expanding output. World tea production in 1981 is forecast to total a record 1.85 million tons, up slightly from 1980. This bumper crop is due largely to production increases in such countries as Bangladesh, Sri Lanka, and China which more than offset an expected fall in output in India, the largest producer.

The United States is a major producer of only one of these items - sugar, so the general price weakening that has occurred in light of the large crop forecasts has been generally beneficial to American consumers, at least in the short run. Implementation of the International Cocoa Agreement and the workings of the International Coffee Agreement have helped to stem the drop in cocoa and coffee prices, although the latter were also helped somewhat by a July frost in Brazil. The International Sugar Agreement has been no great success in stabilizing sugar prices and those prices are now slightly below the Agreement's target range of 13 to 23 cents. In spite of the shortcomings of these agreements producing countries put great emphasis on them and push for further participation on the part of the United States. We are presently members of only the coffee and sugar agreements.

SUGAR

As I noted earlier, our first estimate of world sugar output in 1981/82 is for a crop of 95.8 million tons, up more than 10 percent from our revised estimate of 86.7 million tons for 1980/81. Assuming a world consumption offtake of 92 million tons during the year, this would indicate a stock buildup of almost four million tons. Based on our latest supply and distribution calculations, world sugar stocks totaled about 21.3 million tons at the end of 1980/81. An increase of 3.8 million tons would boost the stock level to almost 25.1 million tons at the end of 1981/82, or about 27 percent of annual consumption. Of course, the lower prices that prevail now could result in further consumption increases but this is not yet evident in the information we have received from our people in the field.

A year ago I commented here that the 40 cent price level then prevailing was a far cry from the 9 cents of the fall of 1979. Today, we are looking at a price of about 12 cents which is in itself quite a turnaround from last year. We had expected that the development of the 1981 beet crop in Europe would have an important effect on prices as we moved through the year. However, what some of us did not correctly foresee was the influence the European Community and its policies could have on prices. Up until April 1 of this year, the EC was attempting to moderate its weekly export approvals in order to not push prices below a reasonable level. After April 1, however, the EC changed its policy and became intent on reducing its stock level of 1980/81 sugar at seemingly whatever cost in restitution or subsidy payments. This resulted in a subsidy on refined sugar that gradually rose to a peak of more than 13 cents in mid September. With these quantities of sugar coming into the market, and in the absence of other developments, prices had little chance to recover. World raw sugar prices reached a low of 10 1/2 cents on September 17 and though they have recovered a little to about 12 cents, further increases seem unlikely unless, and this is of course an important "unless", the 1981/82 cane crop does not come in as presently forecast. This is not to imply that the European beet crop is already in because things can still go wrong there also. But by and large it appears that crop will be a big one.

The EC role in the sugar picture this past spring and summer has had repercussions here in the United States with the submission of a petition by one of our big sugar companies to the United States Trade Representative asking for action under the provisions of the GATT. They argue that the EC's sugar ~~require~~ ^{gimmick} has enabled it to unfairly increased its share of world export trade through their heavily subsidized exports. Our representatives in Geneva have already asked the EC for bilateral discussions on this matter and here in Washington the Trade Representative's office is holding hearings-tomorrow I believe. In the meantime the EC has started talking of the possibility of holding back some sugar in order to try strengthen prices. Perhaps the unhappiness their policies have caused in the sugar exporting world has had something to do with their desire to seek cooperation with the rest of the world but it also seems quite evident that they too are suffering financially at present price levels.

Getting back to production.

Areawise, we expect about a 6 1/2 percent increase in sugar production in the northern half of this hemisphere in 1981/82. The biggest increase we forecast for Cuba which we put at 6.8 million tons compared to our revised estimate of 6.4 million for 1980/81. Production is also forecast to be up in the United States with the biggest increase coming in cane production. Mexican production should also be up some though perhaps somewhat below their production targets. Imports of more than half a million tons will again be needed. Guatemala continues to expand its acreage in cane. The sugar output level in 1981/82 is forecast to be up about 40 percent over 1979/80.

In South America, Brazil has set a target of 8.5 million tons of sugar for 1981/82. Damage from a July frost is said to have been negligible to this crop but may have affected potential 1982/83 output somewhat. Alcohol production in 1981/83 is forecast at 4.3 billion liters as compared with 4.07 in 1980/81. Domestic consumption and exports of alcohol have slacked off, however, and this may result in a slowdown in the expansion program. In Argentina the acreage of cane harvested is expected to drop in 1981/82 due to the lower prices that have prevailed. As a result sugar production is forecast to be down. This appears to be one of the few places in the world where that will be the case this year. In Peru, a sizeable increase is projected as that country seeks to recover from the dry weather and other serious problems that have affected the industry in recent years. It is still expected that some imports will be needed, however.

The European Community will show one of the largest increases in output in 1981/82 as production is projected to be up almost 15 percent. The biggest increases will come in France (up 21 percent) and West Germany (up 12 percent) to 5.1 and 3.4 million tons, respectively. Total EC output is forecast at 14.7 million compared with 12.8 million in 1980/81.

Elsewhere in Western Europe, Spain is continuing its comeback from two poor production years. However, imports of about 100,000 tons will again be needed.

In Eastern Europe, Poland's crop is expected to be its best in years. Yugoslavia also looks to one of its biggest crops ever following a 14 percent increase in area planted. The Soviet Union is suffering another year of poor output. Our estimate is for a crop of 7.1 million tons based on a beet crop estimate of 77.5 million tons. Procurement is forecast to be up a bit from last year. It is still early in the processing season, however, and there could still be significant changes in the situation. Whatever the final production figure, it is expected that significant quantities of sugar will still need to be imported though these may not be sought until later in the crop year.

Production in Africa will be up some 11 percent in 1981/82 as South Africa recovers from its drought with an increase of 22 percent over 1980/81. Among the smaller producers, both Swaziland and Zimbabwe continue to steadily expand their production.

In Asia, the big increase is forecast to come in India where production is estimated to be up more than a million and a half tons. Part of this is an increase of about 250,000 tons in Khandsari production. This is a centrifugal product but is not produced in the big, more modern mills. The area planted to sugarcane is forecast to be up 10 percent to 3.15 million hectares in 1981/83, although about 40 percent of the total sugarcane produced will be used for the non-centrifugal "gur" production. Elsewhere in Asia production is expected to be up Indonesia, the Philippines and Thailand. Production is also moving upward in China. Our estimate for 1981/82, 3.37 million tons, is up almost 40 percent from that produced two years ago in 1979/80. China produces both beets and cane and both sectors are expanding. Cane is the source of most of the sugar -- about 79 percent of the total. Two years ago the cane sugar portion was 86 percent so beet production has been expanding faster.

Australia's production is forecast at 3.55 million for 1981/82 in spite of some labor problems during the harvest season. Their 1981/82 figure is 20 percent above the 2.97 million tons produced in 1979/80 and 5 percent above the 1980/81 figure.

Of the worldwide estimate of 95.8 million ton production forecast for 1981/82, cane sugar accounts for 59.7 million (62 percent) while the beet sugar portion is 56.1 million (38 percent).

INTERNATIONAL SUGAR AGREEMENT

The International Sugar Agreement's "prevailing price" for raw sugar fell back into its target range in early March (for the first time since March a year earlier), remained within that range almost 6 months before dropping through the bottom of the range (13 cents) in mid September. While prices were within the range various actions were triggered which were meant to stem the falling prices. These actions were:

At 21 cents Importing members were required to start limiting imports from non-members to 75 percent of these in a base period. (On September 16 when the price went below 13 cents this quantity was lowered to 55 percent of imports in the base period). In the case of the United States however this is not important since most sugar comes from member countries. The effective quota for non-members is now less than 6,000 tons.

At 16 cents ISA export quotas were reimposed. However, those quotas were not retroactive so a country could still export during the remainder of the year an amount equal to its entire 1981 quota no matter what it had shipped earlier in the year.

When prices passed the 15 cent mark the global quota was cut 5 percent but this cut was restored 13 days later when prices temporarily strengthened.

After that prices ranged in the 13 to 17 cent range for some time and the ISO's Council refrained from any action till they went definitely below 13 cents on September 14. The global quota was then cut the maximum of 15 percent. However, all this was largely bookkeeping anyway since no individual country's quota can be lower than 85 percent of its Basic Export Tonnage. For most countries 85 percent of the BET is more than their annual quota as calculated from the global quota. Thus, 5 percent increases and reductions will have a real effect on individual quotas only when the global quota is over 85 percent of total BET's.

On July 1, 1981 the stock fund fee on all sugar moving between members was increased to \$1.65 per metric ton from its former level of 50 cents. This was due to an anticipated need for a bigger stock fund since, with the reimposition of quotas there was a requirement for exporting members to start building stocks once again. By July 1, 1982 these members are to have accumulated 40 percent of the target reserve stock level, or about 1 million tons.

As has been apparent, these efforts of the ISA to hold prices within the range when they were weakening have been no more successful than the efforts to hold prices within the range when they were strengthening, thus pointing out one of the weaknesses of the present Agreement.

Two weeks from today the annual fall meetings of the ISO will get underway at its headquarters in London. Besides the usual business of such meetings there will be some subjects that will get special attention.

1. A annual review of prices which will undoubtedly bring producer requests for an increase in the target price range.

2. Plans for beyond 1982. This Agreement is scheduled to expire on December 31, 1982. The question is whether to extend it for two years, a possibility provided for in the Agreement itself, or to try to negotiate a new agreement which would correct some of the weaknesses of the present one.

3. Finally, there is the question of EC membership. Most people agree that it cannot be really effective without the EC and the sugar it represents. Though the EC has recently shown a little more willingness to talk about the possibility of joining, it remains to be seen how its views (and its sugar) can be meshed in with those of the present membership. It was at the expense of those members that EC expanded its share of the world market while they were holding back sugar in an attempt to try to stabilize prices.

U.S. LEGISLATION

I should not close without a word about the pending farm bill and how it might affect the international sugar picture. As you are aware, the Senate version of the farm bill contained provisions for a sugar program while the House version did not. We of course do not know what will come out of the conference on the farm bill. However, the Senate vote, along with the action we had to take in September to reimpose a one cent Section 22 import fee, plus the necessity of increasing that fee on October first, were enough to have caused considerable concern among producing countries that sell a good part of their sugar to this country. They point out that if a support program such as described in the Senate bill were to be accepted then both fees and duties are likely to be increased even further in order to protect that program. This, they feel, would be heavily damaging to their economies and, they argue, would more than offset any assistance we give them through other channels.

The U.S. Government is not able to really respond to these concerns until such time as the Congress passes a farm bill - with or without a sugar program - and the President signs it. This will make our position at the upcoming ISO meeting a little tentative, unless of course the decision is definite by then. Certainly we would have difficulty arguing against a price increase if we ourselves have a support price higher than that of the ISA. On the other hand, if we have no sugar program we might have difficulty in supporting programs meant to protect sugar programs in other countries. It will be an interesting period just ahead for all of us concerned with the world sugar picture.

CENTRAL AMERICAN AND CARIBBEAN PRODUCTION OF SUGAR IN SELECTED COUNTRIES
ANNUAL 1976/1977 - 1981/1982 1/
(In Thousands of Metric Tons)

REGION AND COUNTRY	1976/1977	1977/1978	1978/1979	1979/1980	1980/1981	NOVEMBER 1980/1982 (ESTIMATE) 2/
NORTH AMERICA:						
CANADA.....	165	147	125	109	125	130
MEXICO.....	2,656	3,029	3,058	2,765	2,518	2,700
UNITED STATES 3/.....	5,951	5,251	5,382	5,028	5,311	5,624
TOTAL NORTH AMERICA.....	8,852	8,427	8,565	7,902	7,954	8,454
SOUTH AMERICA:						
ARGENTINA.....	1,592	1,665	1,387	1,395	1,715	1,550
BOLIVIA.....	267	277	286	297	260	290
BRAZIL.....	7,500	8,863	7,740	6,968	8,100	8,500
CHILE.....	250	129	103	58	231	145
COLOMBIA.....	882	915	1,019	1,193	1,200	1,250
Ecuador.....	301	281	353	357	366	359
GUYANA.....	332	342	304	294	288	285
PARAGUAY.....	56	77	68	69	78	80
PERU.....	924	881	715	552	500	700
SURINAM.....	7	10	11	12	12	12
URUGUAY.....	125	113	93	71	76	80
VENEZUELA.....	443	325	325	315	253	335
TOTAL SOUTH AMERICA.....	12,721	13,878	12,404	11,571	13,071	13,576
CENTRAL AMERICA:						
BELIZE.....	93	93	100	105	99	100
COSTA RICA.....	195	191	195	191	189	194
EL SALVADOR.....	291	288	277	179	174	190
GUATEMALA.....	517	410	376	398	448	500
HONDURAS.....	107	131	167	187	212	218
NICARAGUA.....	224	214	212	179	193	223
PANAMA, EXCLUDE CANAL ZONE.....	177	175	228	200	215	230
TOTAL CENTRAL AMERICA.....	1,604	1,502	1,555	1,439	1,530	1,655
CARIBBEAN:						
BARBADOS.....	124	104	117	135	96	105
CUBA.....	6,100	7,200	7,500	6,500	6,400	6,800
DOMINICAN REPUBLIC.....	1,222	1,164	1,203	1,013	1,043	1,100
GUATEMALA.....	91	84	109	96	58	54
HAITI.....	51	52	61	55	47	55
JAMAICA.....	296	306	270	251	205	205
MARTINIQUE.....	14	13	10	6	6	6
PUERTO RICO.....	243	195	175	159	137	136
ST. KITTS-NEVIS-ANGUILLA.....	41	36	40	35	40	40
TRINIDAD AND TOBAGO.....	176	148	144	116	93	140
TOTAL CARIBBEAN.....	8,358	9,292	9,629	8,366	8,125	8,641
EUROPEAN COMMUNITY:						
BELGIUM/LUXEMBOURG.....	744	774	844	975	970	1,100
DENMARK.....	410	558	442	492	471	490
FRANCE.....	2,974	4,268	4,000	4,257	4,187	5,085
GERMANY, FEDERAL REPUBLIC.....	2,734	3,076	2,997	3,095	2,992	3,350
GREECE.....	385	295	348	313	182	313
IRELAND.....	189	179	204	190	160	195
ITALY.....	1,748	1,327	1,605	1,669	1,933	2,065
NETHERLANDS.....	945	890	1,019	913	936	1,000
UNITED KINGDOM.....	755	1,032	1,111	1,154	1,106	1,140
TOTAL EUROPEAN COMMUNITY.....	10,884	12,398	12,570	13,058	12,827	14,738
OTHER WEST EUROPE:						
AUSTRIA.....	438	520	375	429	480	514
FINLAND.....	80	75	104	100	114	92
PORTUGAL (Azores & Madeira).....	10	11	10	4	3	3
SPAIN.....	1,376	1,184	1,106	718	982	1,058
SWEDEN.....	302	326	322	350	312	353
SWITZERLAND.....	83	84	105	116	103	110
TOTAL OTHER WEST EUROPE.....	2,289	2,200	2,022	1,717	1,994	2,130
EAST EUROPE:						
ALBANIA.....	22	21	21	21	20	20
BULGARIA.....	285	275	240	305	215	200
CZECHOSLOVAKIA.....	673	924	875	950	900	950
GERMANY, EAST.....	600	758	820	792	767	891
HUNGARY.....	388	469	490	468	443	460
POLAND.....	1,801	1,819	1,763	1,582	1,128	1,821
ROMANIA.....	800	775	555	571	553	652
YUGOSLAVIA.....	650	738	777	814	709	853
TOTAL EAST EUROPE.....	5,219	5,779	5,541	5,503	4,735	5,847
U.S.S.R.:						
USSR.....	7,350	8,825	9,300	7,800	6,900	7,100
TOTAL U.S.S.R.	7,350	8,825	9,300	7,800	6,900	7,100

Footnotes at end of table
November 1981

(CONTINUED)

Foreign Production Estimates Division, FAS, USDA

(CONTINUED) CENTRIFUGAL SUGAR (RAW VALUE) PRODUCTION IN SPECIFIED COUNTRIES
ANNUAL 1976/1977 - 1981/1982 1/
(In Thousands of Metric Tons)

REGION AND COUNTRY	1976/1977	1977/1978	1978/1979	1979/1980	1980/1981	NOVEMBER 1981/1982 (ESTIMATE) 2/
NORTH AFRICA:						
ALGERIA.....	12	15	10	15	15	15
EGYPT.....	639	635	668	662	658	718
MOROCCO.....	345	271	375	339	330	330
SUDAN.....	150	170	180	205	400	400
TUNISIA.....	10	14	10	6	10	10
TOTAL NORTH AFRICA.....	1,156	1,105	1,243	1,227	1,413	1,473
OTHER AFRICA:						
ANGOLA.....	50	60	39	40	40	40
CAMEROON.....	22	25	30	32	32	32
CONGO.....	45	40	25	25	25	25
ETHIOPIA.....	180	150	165	163	160	160
GHANA.....	14	17	20	17	20	20
IVORY COAST.....	30	40	52	103	138	138
KENYA.....	141	194	255	317	429	436
MADAGASCAR.....	107	110	112	116	115	115
MALI.....	70	80	92	95	140	140
MALI.....	15	20	23	25	25	25
MALITIUS.....	721	705	705	730	504	637
MOZAMBIQUE.....	200	160	175	175	170	170
NIGERIA.....	55	34	29	32	42	55
REUNION.....	240	261	287	274	239	268
SENEGAL.....	35	25	33	41	40	40
SOMALIA.....	30	30	25	27	27	27
SOUTH AFRICA.....	2,144	2,211	2,209	2,204	1,709	2,088
SWAZILAND.....	229	238	258	328	387	433
TANZANIA.....	101	101	129	120	125	130
UGANDA.....	30	15	10	12	10	10
ZAMBIA.....	46	54	51	51	50	60
ZAMBIA.....	90	85	80	92	80	80
ZIMBABWE.....	250	275	309	300	358	390
TOTAL OTHER AFRICA.....	4,917	4,930	5,113	5,321	4,565	5,519
MIDDLE EAST:						
IRAN.....	745	686	650	630	600	600
IRAQ.....	13	23	25	25	25	25
ISRAEL.....	40	65	24	25	25	25
LEBANON.....	5	5	12	11	10	10
SYRIA.....	32	27	27	34	35	35
TURKEY.....	1,264	1,065	1,079	1,052	930	1,300
TOTAL MIDDLE EAST.....	2,119	1,871	1,817	1,777	1,600	1,995
ASIA:						
AFGHANISTAN.....	18	20	22	22	20	20
BAHAGLACSM.....	150	191	141	101	155	155
BURMA.....	120	130	130	135	135	135
CHINA 5/.....	2,153	2,450	2,675	2,507	3,052	3,356
INDIA 6/.....	6,043	8,201	7,071	5,170	6,534	8,194
INDONESIA.....	1,068	1,125	1,385	1,313	1,370	1,520
JAPAN.....	565	630	693	742	822	770
PALAU.....	38	53	58	52	59	61
NEPAL.....	16	17	18	17	17	17
PAKISTAN.....	741	922	653	574	854	880
PHILIPPINES.....	2,753	2,397	2,347	2,325	2,373	2,450
SRI LANKA.....	30	35	40	45	45	45
TAIWAN.....	1,123	768	891	874	760	810
THAILAND.....	2,212	1,584	1,851	1,087	1,639	2,150
VIETNAM.....	31	40	45	45	45	45
TOTAL ASIA.....	17,041	18,563	18,020	15,029	17,880	20,608
OCEANIA:						
AUSTRALIA.....	3,405	3,322	2,978	2,967	3,387	3,550
FIJI.....	328	361	347	473	460	470
TOTAL OCEANIA.....	3,733	3,683	3,325	3,440	3,847	4,020
TOTAL SELECTED COUNTRIES	86,263	92,454	91,104	84,150	86,741	95,756

1/ Crop years are on a September/August basis, but include the outturn of sugar from several Southern Hemisphere countries which begin prior to September. Refined beet sugar is generally converted to raw value by multiplying by 1.087 while refined cane sugar is multiplied by 1.07 to obtain the raw value equivalent. 2/ Preliminary. 3/ United States includes continental beet, continental cane, and Hawaii cane, but excludes Puerto Rico cane which is listed under Caribbean. 4/ France excludes production of sugar from cane from Guadeloupe and Martinique as well as Reunion. Production from these countries is listed under Caribbean and Africa, respectively. 5/ May contain some non-centrifugal sugar. 6/ Includes Khandasari sugar (native type - semi white centrifugal sugar).

Source: Prepared or estimated on the basis of official statistics of foreign governments, other foreign source materials, reports of U.S. Agricultural Counselors and Foreign Service Officers, office research, field travel and related information.

COFFEE

World coffee production is expected to rise dramatically from 83.4 million bags in 1980/81 to 95.6 million bags in 1981/82. Much of the increase in output will occur in Brazil where large scale plantings made after the destructive frost of 1975 are now reaching peak productivity. While the increase in output for 1981/82 will be greatest in Brazil, production is up in many other major coffee producing countries as well.

During 1981/82 world coffee consumption will fall far short of production for the year, leading to a 13.6 million bag increase in yearend stocks. The prospect of the large surplus, and the uncertain future of the International Coffee Agreement, markedly weakened coffee prices in June 1981. Prices firmed when coffee producing and consuming countries meeting in London, September 7-25, decided on an export quota system for coffee year 1981/82 beginning October 1, 1981 largely designed to keep international coffee prices within a \$1.20 to \$1.40 per pound price band.

PRODUCTION

It is currently estimated by FAS that world coffee production in 1981/82 will be 95.6 million bags (60 kilograms each). At that level the crop would be the largest ever, and 11.9 million bags greater than the outturn in 1978/79. Since the low crop of 1976/77, devastated by the disastrous 1975 frost in Brazil, output has risen by an estimated 55 percent.

Much of the growth in world production since 1976/77 is accounted for by Brazil. For the current crop year (1981/82), Brazilian production will reach 32.5 million bags, compared to 21.5 million bags in 1980/81, and only 9.3 million bags in 1976/77.

During the early morning hours of July 20-21, 1981, Brazil's coffee trees suffered severe frost damage. The impact on the 1981/82 crop was minor, except in Minas Gerais, where a major portion (70 percent) remained unharvested. There quality, rather than output, was affected.

Due to the frost, Brazil's coffee production potential for 1982/83 was reduced from 27 to 30.5 million bags. (The pre-frost production potential for 1982/83 was expected to be 1.5 to 5.0 million bags below the excellent harvest achieved in 1981/82 because of the biennial nature of the coffee production cycle). In addition, some of Brazil's coffee growing areas have suffered from drought conditions which could further reduce the country's production potential for the year by .5 to 1.5 million bags.

At 14.5 million bags, Columbia's 1981/82 harvest will be up 500,000 bags from 1980/81, and a new record. Progress toward replacing the traditional shade grown varieties with the higher yielding sun grown varieties has been an important factor in Colombia's increased coffee output in recent years.

Central American output is expected to be up slightly during 1981/82, with increases in Guatemala, Haiti, Honduras and Mexico more than offsetting losses in Costa Rica, Dominican Republic, El Salvador and Nicaragua. The increase was held down by low coffee prices and internal political and economic problems, especially in El Salvador.

Production in the Ivory Coast may exceed 5.0 million bags during 1981/82, down 500,000 bags from 1980/81, due to the cyclical pattern of production. Output set a new record in 1980/81, partly because of the installation of automated off-farm decorticating plants, which have replaced time-consuming on farm hand hulling, freeing labor for better management and more thorough harvesting.

Indonesian production of coffee is estimated at 5.4 million bags in 1981/82, placing it third among the worlds largest producers, and first in terms of Robusta production.

TRADE/CONSUMPTION

World coffee production and consumption were nearly balanced during crop year 1980/81. This balance was difficult to verify because international trade volumes were reduced by the amount of the stock drawdown in consuming countries. Based on the latest information available, exports from producing countries declined from about 62.1 million bags during 1979/80, to about 59.4 million bags for 1980/81. Pancafe stocks were eliminated and roasters reduced their holdings to the minimum level possible, because of the high interest rates.

During 1981/82, exports are expected to increase to about 63.0 million bags, which would allow for world consumption of 62.0 million bags, and a 1.0 million bag buildup in consumer held stocks.

While world production is forecast to rise from 82.7 million bags in 1980/81 to 94.2 million bags in 1981/82 world consumption will rise only slightly, if at all.

U.S. imports of green coffee in August reached 1.2 million bags valued at \$187 million, bringing total imports for January-August 1981 to 10.8 million bags valued at \$1.8 billion. This is down 14.2 percent in volume and 36.2 percent in value from year earlier levels.

According to ICO statistics, coffee consumption in the United States averaged 1.92 cups per person during 1980, down from 2.02 cups per day in 1980, and 2.06 cups in 1979. Consumption in 1981, at 1.92 cups, was the lowest level recorded since the ICO began its survey in 1950, falling below the level in 1977, which was related to the exceptionally high prices, following the 1975 Brazilian frost. The drop in 1980 and 1981 appears to indicate a return to the long term downward consumption trend present since 1962.

A majority of European traders believe coffee consumption there has increased modestly, with others believing consumption is only static. Uncertain economic conditions are believed to have had a depressing effect on coffee sales in Europe. Although world coffee prices have been lower over the past year, part of this advantage has been offset by a strengthened U.S. dollar relative to European currencies. Most international coffee sales are quoted in dollars.

While an almost unlimited supply of coffee may exist in the world at very favorable prices, consumers in the centrally planned economies of Eastern Europe including Romania, Bulgaria, Czechoslovakia, Yugoslavia, Poland, Hungary, and Albania cannot buy more because hard currency releases for coffee are tightly controlled.

Consumption of coffee in producing countries continues to grow slowly, rising only about 1.3 percent between 1980/81 and 1981/82, to 20.9 million bags. Few producing countries consume much of their own coffee. The largest producer/consumer is Brazil, taking an estimated 8 million bags. Domestic use exceeds one million bags in only four other countries, Mexico, Colombia, Ethiopia and Indonesia.

In order to conserve coffee stocks for sale during the frost reduced 1982/83 crop year, Brazil will probably limit its 1981/82 crop sales to 16.5 to 17.0 million bags, up only about 1.0 million bags from the preceding year. Brazilian exports will include the soluble equivalent of 2.5 million bags of green coffee. The export levels for most of the other important coffee producing countries will be limited to their ICO quotas for 1981/82, plus any additional sales they are able to make to non-quota markets.

STOCKS

Carryover stocks in producing countries totaled about 31.8 million bags at the end of 1980/81, 5.7 million bags above the level at the end of 1979/80. Mainly because of the much larger Brazilian crop, carryover stock levels are projected to grow to 45.3 million bags by the end of 1981/82, the highest amount since 1972/73. No major change is expected during 1982/83 as world output should essentially match consumption.

PRICES

Calendar 1981 green coffee prices were at their highest level in mid-January, based on an International Coffee Organization index, at nearly \$1.30 per pound. They declined to the \$1.20 level by the end of January, where they remained until mid-May. At that point the index price fell rapidly to below 90 cents per pound as the market was overwhelmed by negative factors, especially the large world surplus in prospect, and producer country demands for larger coffee export quotas for coffee year 1981/82 (October/September).

Coffee prices rose briefly in late July based on news of the Brazilian Frost, then declined again to less than 1 dollar per pound in late August and early September. Prices began a new rise as prospects for agreement on a rather restrictive set of quotas for coffee year 1981/82 improved. By October 15 the ICO index price had reached \$1.15 per pound. It now seems likely that prices will remain within the central \$1.20-\$1.40 per pound price corridor agreed to by most producing and consuming members of the ICO at their September 7-25 council meeting in London.

INTERNATIONAL COFFEE AGREEMENT

On September 25, 1981, the last day of an extended session, the International Coffee Council reached agreement on a coffee export quota system for coffee year 1981/82, beginning October 1, 1981. The major element of the agreement was the establishment of a global export quota for the year of 56.0 million 60 kilogram bags, including 53.2 million bags for members entitled to a basic quota (those with quotas over 400,000 bags), and 2.8 million bags for members exempt from basic quotas (those with quotas under 400,000 bags).

Under the system, quotas are automatically adjusted pro rata to exporting members entitled to basic quotas at specified price levels based on a fifteen-day moving average of the Composite Indicator Price. Adjustments should be more rapid for 1981/82 than for 1980/81 when a twenty-day moving average indicator price was used.

The global quota can be reduced in stages to 52 million bags when the fifteen-day average indicator price is at or below U.S. \$1.20. The quota also can be increased to 60.6 million bags if the indicator price reaches or exceeds U.S. \$1.40. The 60.6 million bag figure includes 600,000 bags to be released if the average price at any time during the coffee year is at or above U.S. \$1.35.

In order to force coffee prices up the initial quota for the first quarter (October-December 1981) was set at 13 million bags. Since the fifteen-day moving average of the Composite Indicator Price reached and exceeded U.S. \$1.15 by October 22, 1981 the quarterly quota was increased by 1.0 million bags. The additional quota will be distributed pro rata to members having a basic annual quota. If on December 1, 1981, the fifteen-day moving average of the Composite Indicator Price is at or below U.S. \$1.20 per pound, the provisions shown on coffee Chart 1 will come into effect with the first of the reductions provided for in the system applied in the second quarter of coffee year 1981/82.

Any 1 million bag increases or decreases in the global annual quota are to be applied to the extent possible during the same quarter in which they occur, but no more than two cuts or releases can be applied in the same quarter.

Other decisions taken by the Council included a one-year extension of the 1976 Coffee Agreement (to September 1983) with the provision that amendments proposed by January 31, 1982 be acted on by July 1, 1982.

TABLE 1-- COFFEE, GREEN: TOTAL PRODUCTION IN SPECIFIED COUNTRIES - AVERAGE 1972/73-1976/77, ANNUAL 1977/78-1981/82
(IN THOUSANDS OF 60 KILD BAGS) 2/

REGION AND COUNTRY	AVERAGE 1972/73-1976/77	1977/78	1978/79	1979/80	1980/81	1981/82
NORTH AMERICA:						
COSTA RICA.....	1,368	1,449	1,749	1,507	2,038	1,875
CUBA.....	448	375	325	300	300	300
DOMINICAN REPUBLIC.....	854	1,025	767	889	850	800
EL SALVADOR.....	2,642	2,700	3,423	3,122	2,376	2,214
GUATEMALA.....	2,225	2,550	2,827	2,647	2,450	2,600
HAITI.....	554	519	443	664	460	550
HONDURAS.....	792	1,036	1,132	1,140	1,380	1,500
JAMAICA.....	25	23	14	34	27	30
MEXICO.....	3,742	3,401	4,042	3,600	3,650	3,850
NICARAGUA.....	718	967	1,004	1,009	950	900
PANAMA.....	75	101	108	102	117	115
TRINIDAD-TOBAGO.....	49	41	39	36	33	41
US-HAWAII.....	15	14	10	13	9	16
US-PUERTO RICO.....	187	199	159	183	234	217
TOTAL NORTH AMERICA.....	13,694	14,400	16,042	15,246	14,874	15,008
SOUTH AMERICA:						
BOLIVIA.....	102	118	122	137	145	165
BRAZIL.....	19,720	17,590	20,000	22,000	21,500	32,500
COLOMBIA.....	8,640	11,050	12,600	12,712	14,000	14,500
ECUADOR 3/.....	1,274	1,302	1,833	1,584	1,362	1,525
GUYANA.....	14	17	17	20	19	17
PARAGUAY.....	94	71	144	40	116	175
PERU.....	1,018	1,050	1,130	1,265	1,170	1,250
VENEZUELA.....	913	1,061	1,011	1,007	1,073	1,035
TOTAL SOUTH AMERICA.....	31,775	32,169	36,857	38,765	39,385	51,167
AFRICA:						
ANGOLA.....	2,557	1,047	648	300	430	400
BENIN.....	23	3	3	5	5	5
BURUNDI.....	361	285	387	466	333	530
CAMEROON.....	1,505	1,371	1,627	1,658	1,750	1,790
CENTRAL AFRICAN REPUBLIC.....	167	165	180	215	235	220
CONGO, BRAZZAVILLE.....	19	46	107	43	58	65
EQUATORIAL GUINEA.....	102	80	90	100	100	110
ETHIOPIA.....	2,530	3,143	3,142	3,088	3,100	3,200
GABON.....	6	3	6	8	8	5
GHANA.....	65	32	31	38	33	36
GUINEA.....	48	16	59	34	75	65
IVORY COAST.....	4,599	3,393	4,616	4,120	5,333	4,666
KENYA.....	1,304	1,417	1,239	1,625	1,503	1,587
LIBERIA.....	95	137	144	148	135	125
MADAGASCAR.....	1,133	1,292	814	1,313	1,350	1,400
NIGERIA.....	50	43	50	50	52	52
RWANDA.....	416	362	311	501	527	400
SIERRA LEONE.....	119	77	230	172	190	167
TANZANIA.....	864	835	856	907	1,000	1,100
TOGO.....	174	82	105	182	160	170
UGANDA.....	3,131	1,868	1,823	2,082	2,000	1,900
ZAIRE (CONGO-K).....	1,376	1,129	1,300	1,231	1,400	1,300
ZIMBABWE.....	53	71	77	88	85	95
TOTAL AFRICA.....	20,695	16,897	17,845	18,374	19,862	19,388
ASIA:						
INDIA.....	1,629	2,147	1,842	2,600	2,175	2,250
INDONESIA.....	2,773	3,911	4,788	4,803	5,162	5,420
MALAYSIA.....	109	132	143	145	148	152
PHILIPPINES.....	489	575	600	705	769	835
PORTUGUESE TIMOR 4/.....	68	75	--	--	--	--
THAILAND.....	93	163	233	210	300	319
VIETNAM.....	58	65	70	70	70	60
YEMEN, ARAB REP.....	47	48	50	53	57	60
TOTAL ASIA.....	5,265	7,116	7,726	8,586	8,681	9,096
OCEANIA:						
NEW CALEDONIA.....	25	25	25	25	25	25
PAPUA NEW GUINEA.....	625	767	740	844	850	900
TOTAL OCEANIA.....	650	792	765	869	875	925
WORLD TOTAL.....	72,078	71,374	79,235	81,840	83,677	95,584

1/ Coffee marketing year begins about July in some countries and in others about October. 2/ 132,276 pounds. 3/ As indicated in footnote 1, the coffee marketing year begins in some countries as early as July. Ecuador is one of these countries. Hence, the crop harvested principally during June-October 1981 in that country is shown as production for the 1981/82 marketing year. In Ecuador, however, this is referred to as the 1980/81 crop. 4/ Beginning 1978/79 included in Indonesia.

NOTE: Production estimates for some countries include cross-border movements. Also, due to rounding, country totals may not add to area and world totals.

SOURCE: Prepared or estimated on the basis of official statistics of foreign governments, other foreign source materials, reports of U.S. Agricultural Attaches and Foreign Service Officers, results of office research, and related information.

TABLE 2--COFFEE, GREEN: EXPORTABLE PRODUCTION IN SPECIFIED COUNTRIES - AVERAGE 1972/73-1976/77, ANNUAL 1977/78-1981/82
(IN THOUSANDS OF 60 KILO BAGS) 2/

REGION AND COUNTRY	AVERAGE 1972/73-1976/77	1977/78	1978/79	1979/80	1980/81	1981/82
NORTH AMERICA:						
COSTA RICA.....	1,204	1,264	1,533	1,296	1,794	1,640
CUBA.....	--	--	--	--	--	--
DOMINICAN REPUBLIC.....	574	755	487	604	560	505
EL SALVADOR.....	2,466	2,510	3,228	2,922	2,172	2,009
GUATEMALA.....	1,944	2,245	2,517	2,332	2,125	2,265
HAITI.....	329	304	228	444	235	330
HONDURAS.....	691	929	1,023	1,026	1,264	1,380
JAMAICA.....	10	16	5	22	14	16
MEXICO.....	2,240	2,001	2,935	2,310	2,200	2,370
NICARAGUA.....	641	887	921	926	866	815
PANAMA.....	12	34	40	36	48	45
TRINIDAD-TOBAGO.....	36	27	24	20	16	24
US-HAWAII.....	--	--	--	--	--	--
US-PUERTO RICO.....	--	--	--	--	--	--
TOTAL NORTH AMERICA.....	10,148	10,972	12,941	11,938	11,294	11,399
SOUTH AMERICA:						
BOLIVIA.....	75	87	89	103	111	130
BRAZIL.....	12,320	10,000	12,000	14,000	13,500	24,500
COLOMBIA.....	7,218	9,500	10,970	10,962	12,175	12,650
ECUADOR 3/.....	1,115	1,107	1,630	1,373	1,142	1,295
GUYANA.....	--	--	--	2	--	--
PARAGUAY.....	69	45	117	9	88	145
PERU.....	774	800	880	1,015	929	995
VENEZUELA.....	266	271	178	72	115	58
TOTAL SOUTH AMERICA.....	21,838	21,810	25,864	27,536	28,060	39,773
AFRICA:						
ANGOLA.....	2,468	972	568	220	345	315
BENIN.....	22	2	2	4	4	4
BURUNDI.....	358	282	384	463	330	527
CAMEROON.....	1,479	1,344	1,599	1,626	1,716	1,755
CENTRAL AFRICAN REPUBLIC..	156	153	168	201	218	202
CONGO, BRAZZAVILLE.....	18	45	106	42	57	64
EQUATORIAL GUINEA.....	92	70	80	90	90	100
ETHIOPIA.....	1,052	1,354	1,342	1,255	1,250	1,325
GABON.....	5	2	5	7	7	4
GHANA.....	51	22	23	30	25	27
GUINEA.....	43	10	53	28	69	58
IVORY COAST.....	4,136	3,357	4,551	4,055	5,268	4,601
KENYA.....	1,277	1,367	1,181	1,562	1,428	1,522
LIBERIA.....	87	126	133	136	123	114
MADAGASCAR.....	993	1,152	666	1,158	1,184	1,230
NIGERIA.....	4	--	--	--	--	--
RWANDA.....	414	360	309	499	525	398
SIERRA LEONE.....	114	72	225	167	185	162
TANZANIA.....	839	814	836	887	975	1,077
TOGO.....	173	81	104	181	159	169
UGANDA.....	3,105	1,838	1,793	2,052	1,970	1,869
ZAIRE (CONGO-K).....	1,227	954	1,120	1,041	1,205	1,100
ZIMBABWE.....	44	63	69	79	76	85
TOTAL AFRICA.....	18,158	14,440	15,317	15,783	17,209	16,708
ASIA:						
INDIA.....	880	1,297	1,034	1,757	1,260	1,300
INDONESIA.....	1,790	2,886	3,738	3,723	4,062	4,265
MALAYSIA.....	12	--	--	--	--	--
PHILIPPINES.....	89	250	242	315	389	435
PORTUGUESE TIMOR 4/.....	59	65	--	--	--	--
THAILAND.....	4	17	61	33	97	115
VIETNAM.....	28	30	35	35	35	25
YEMEN, ARAB REP.....	37	38	40	43	47	50
TOTAL ASIA.....	2,898	4,583	5,150	5,906	5,890	6,190
OCEANIA:						
NEW CALEDONIA.....	15	14	14	14	14	14
PAPUA NEW GUINEA.....	613	752	725	828	834	884
TOTAL OCEANIA.....	627	766	739	842	848	898
WORLD TOTAL.....	53,670	52,571	60,011	62,005	63,301	74,968

1/ Coffee marketing year begins about July in some countries and in others about October. Exportable production represents total harvested production minus estimated domestic consumption. 2/ 132,276 pounds. 3/ As indicated in footnote, 1, the coffee marketing year begins in some countries as early as July. Ecuador is one of these countries. Hence, the crop harvested principally during June-October 1981 in that country is shown as production for the 1981/82 marketing year. In Ecuador, however, this is referred to as the 1980/81 crop. 4/ Beginning 1978/79 included in Indonesia.

NOTE: Production estimates for some countries include cross-border movements. Also, due to rounding, country totals may not add to area and world totals.

SOURCE: Prepared or estimated on the basis of official statistics of foreign governments, other foreign source materials, reports of U.S. Agricultural Attaches and Foreign Service Officers, results of office research, and related information.

TABLE 3--WORLD COFFEE SUPPLY AND DISTRIBUTION, 1960-1982

(IN 1,000 60-KG BAGS)

COUNTRY BY TIME PERIOD	BEGINNING STOCKS	PRODUCTION	IMPORTS	TOTAL SUPPLY DISTRIBUTN	DOMESTIC USE	EXPORTS			ENDING STOCKS	
						BEANS	RSTD/GRND	SOLUBLE		TOTAL
WORLD TOTAL										
1960/61.....	58,807	65,375	315	124,497	16,371	42,846	63	92	43,003	65,124
1961/62.....	65,124	75,951	279	141,354	21,074	45,959	56	135	46,151	74,129
1962/63.....	74,129	67,788	257	142,174	14,687	46,778	42	123	46,946	80,539
1963/64.....	90,539	65,340	182	146,061	17,616	50,884	69	118	51,071	77,372
1964/65.....	77,372	52,652	178	130,202	16,741	41,766	58	78	41,903	71,557
1965/66.....	71,557	82,156	249	153,962	17,804	49,669	37	257	49,965	86,190
1966/67.....	86,190	63,384	279	149,853	19,251	48,326	26	564	48,917	81,686
1967/68.....	81,686	70,882	273	152,841	18,072	54,936	55	741	55,733	79,041
1968/69.....	79,041	63,327	229	142,597	19,638	52,545	76	963	53,585	69,374
1969/70.....	69,374	69,734	267	139,375	13,890	53,881	84	1,161	55,125	65,360
1970/71.....	65,360	59,013	505	124,878	19,370	50,538	107	1,253	51,899	53,612
1971/72.....	53,612	73,728	524	127,864	19,049	56,694	258	1,589	58,542	50,271
1972/73.....	50,271	77,197	498	127,966	17,456	58,990	381	2,045	61,417	49,097
1973/74.....	49,097	66,215	563	115,975	19,125	58,354	163	2,149	60,665	36,085
1974/75.....	36,085	82,525	564	119,174	19,250	53,389	240	1,985	55,614	44,299
1975/76.....	44,299	72,866	505	117,670	18,912	57,284	394	2,164	59,845	38,916
1976/77.....	38,916	61,583	506	101,011	13,131	54,808	306	2,224	57,290	25,620
1977/78.....	25,620	71,374	574	97,568	18,938	47,653	175	893	48,720	29,910
1978/79.....	29,910	79,235	606	109,751	19,467	62,023	205	2,430	64,657	25,627
1979/80.....	25,627	81,840	625	108,992	20,121	59,262	236	2,444	61,944	26,027
1980/81.....	26,027	83,677	566	110,270	20,621	54,743	263	2,877	57,883	31,766
1981/82.....	31,766	95,584	557	127,907	20,899	58,198	283	3,141	61,622	45,386

NOTE: TOTAL MAY NOT ADD BECAUSE OF ROUNDING, -- DENOTES UNAVAILABLE, NEGLIGIBLE, OR ZERO

SEPTEMBER 1981

HORTICULTURAL AND TROPICAL PRODUCTS DIVISION
COMMODITY PROGRAMS, FAS, USDA

TABLE 4,
COFFEE YEAR 1981/82
ANNUAL QUOTAS
(000 bags)

Exporting Member	Minimum quota	Annual quota	Maximum quota
<u>TOTAL</u>	<u>52,000</u>	<u>56,000</u>	<u>60,672</u>
A. <u>Sub-total: Members</u> <u>Entitled to a basic quota</u>		<u>53,200</u>	
<u>Colombian Milds</u>		<u>10,885</u>	
Colombia		8,671	
Kenya		1,400	
Tanzania		814	
<u>Other Milds</u>		<u>13,154</u>	
Coast Rica		1,314	
Dominican Republic 1/		575	
Ecuador		1,134	
El Salvador		2,325	
Guatemala		1,884	
Honduras		960	
India		960	
Mexico		1,909	
Nicaragua		698	
Papua New Guinea		610	
Peru		785	
<u>Unwashed Arabicas</u>		<u>16,800</u>	
Brazil 1/		15,500	
Ethiopia		1,300	
<u>Robustas</u>		<u>13,033</u>	
Angola 1/		431	
Indonesia		2,300	
OAMCAF 2/		(6,500)	
Cameroon		1,500	
Ivory Coast		4,200	
Madagascar		800	
Uganda		2,602	
Zaire		1,200	
B. <u>Sub-total: Members</u> <u>exempt from basic quotas</u>		<u>2,800</u>	

1/ See Annex

2/ OAMCAF has an additional quota of 662,000 bags for Members exempt from basic quotas (see Table 2) and a total annual quota of 7,162,000 bags

Angola

The total annual quota of Angola in coffee year 1981/82 is 2,897,861 bags. Angola has declared a shortfall of 831,000 bags, leaving a balance of 2,066,861 bags. However, Angola is prepared to limit its exports to Member countries to an amount of approximately 431,000 bags on condition that:

- (a) if it wishes to increase its exports during coffee year 1981/82 beyond this amount it may do so by informing the Executive Director so that the necessary authorization be granted; and
- (b) it shall be exempt from cuts to be applied to quotas during coffee year 1981/82.

Brazil

Brazil is entitled to a quota in coffee year 1981/82 of 16,941,530 bags and has declared that it will limit its exports to Member countries during the year to 15.5 million bags on condition that it will be exempt from cuts in quotas up to 500,000 bags.

Dominican Republic

The Dominican Republic is entitled to a quota of 610,203 bags in coffee year 1981/82 and has declared that it will limit its export to Member countries during the year to 575,000 bags leaving a balance of 35,203 bags on condition that it will be exempt from cuts in quotas of up to this limit.

SOURCE: ICO

TABLE 5
COFFEE YEAR 1981/82
EXPORT ENTITLEMENTS OF EXPORTING MEMBERS
EXEMPT FROM BASIC QUOTA
(60 Kilo bags)

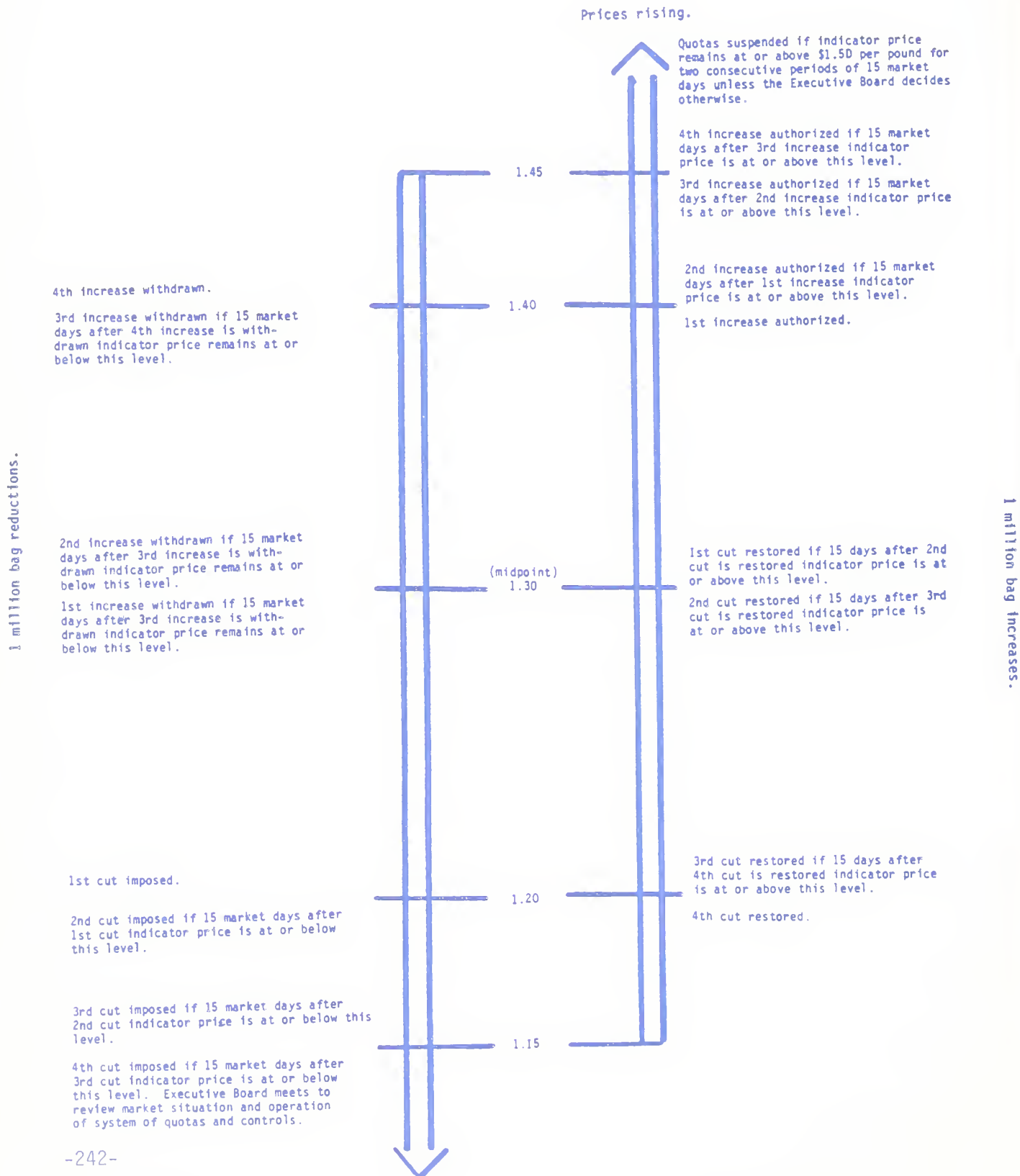
	Export entitlement
TOTAL (a) with OAMCAF	3,438,350
(b) without OAMCAF	<u>2,776,350</u> 1/
<u>Sub-total of Members exporting less than 100,000 bags (without OAMCAF)</u>	<u>666,850</u>
Bolivia	105,850
Ghana	59,500
Jamaica	16,000
Malawi	5,500
Nigeria	67,500
Panama	61,500
Paraguay	105,000
Sri Lanka	49,500
Thailand	95,000
Trinidad and Tobago	30,000
Zimbabwe	71,500
<u>Sub-total of Members exporting more than 100,000 bags (without OAMCAF)</u>	<u>2,109,500</u>
Burundi	400,000
Guinea	100,000
Haiti	400,000
Liberia	125,000
Philippines	400,000
Rwanda	375,000
Sierra Leone	220,500
Venezuela	89,000
<u>OAMCAF</u>	<u>662,000</u>
(a) <u>Members exporting less than 100,000 bags</u>	<u>124,500</u>
Benin	49,500
Congo	37,500
Gabon	37,500
(b) <u>Members exporting more than 100,000 bags</u>	<u>537,500</u>
Central African Republic	256,250
Togo	281,250

1/ Estimated additional shortfalls of 638 350 bags to be declared

SOURCE: ITCO

Chart 1

INTERNATIONAL COFFEE AGREEMENT PRICE STABILIZATION MECHANISM
15 DAY MOVING AVERAGE INDICATOR PRICE
COFFEE YEAR 81/82
(U.S. DOLLARS PER POUND)



COCOA

World cocoa bean production for the 1981/82 October-September crop year is forecast at a record 1.73 million metric tons, 4 percent greater than the bumper 1980/81 outturn of 1.66 million tons and will likely result in a global stock increase for the fifth consecutive year. Increased output is forecast for Africa, North America, and for Asia and Oceania, but South America is expecting a smaller outturn because of poor growing conditions for the Brazilian main crop and because of lower Ecuadorean production. Large scale new plantings coming into bearing and young trees increasing in productivity in the Ivory Coast, Malaysia, and Brazil and expected to keep world production in an expansionary trend for several years.

Reflecting abundant supplies and lower prices, world consumption is starting to recover, but is expected to again remain below production levels in 1982. World cocoa bean grindings for 1982 are forecast at 1.61 million tons, compared with 1.56 million this year and 1.50 million tons in 1980. World stocks increased by an estimated 83,000 tons in 1981 and a stock buildup of 105,000 tons is forecast for 1982 if current estimates of world production are realized.

U.S. cocoa bean grindings for the first three-quarters of 1981 have risen sharply over a year ago, as lower prices and a more favorable bean/product price ratio have encouraged manufacturers to increase their imports of cocoa beans. Imports and grindings of cocoa beans in the major European consuming nations are also running ahead of a year earlier levels.

The decision to provisionally implement the International Cocoa Agreement on August 1, 1981, despite the absence as members--the world's largest producer the Ivory Coast and the largest consumer the United States, has at least temporarily reversed the bearish price trend that cocoa has experienced during the first half of this year. After reaching a 5 year low of 70 cents per pound for the June average, prices (the average of the daily closing price of the nearest three active futures trading months on the New York market) recovered sharply in July to 88 cents, and rose even further in August and September to 96 and 101 cents per pound, respectively.

As of July 31, 1981, the Buffer Stock Fund of the International Cocoa Agreement had available \$220.5 million for the purchase of cocoa in defense of the lower intervention price level of \$1.10 per pound. The Buffer Stock Manager began to purchase cocoa on September 28, 1981 in efforts to meet the Agreements objectives.

COCOA BEANS: PRODUCTION IN SPECIFIED COUNTRIES, 1976/77-1981/82 1/
(In thousands of metric tons)

Region and country	1976/77	1977/78	1978/79	1979/80	1980/81	Forecast 1981/82
North America:						
Costa Rica.....	9.4	9.0	9.0	7.5	7.8	9.0
Cuba.....	2.0	2.0	2.0	2.0	2.0	2.0
Dominican Republic.....	31.0	30.0	34.0	29.0	33.0	35.0
Grenada.....	2.1	2.3	2.3	2.3	2.0	2.0
Guatemala.....	3.0	3.5	3.5	3.5	3.5	3.5
Haiti.....	2.7	3.0	3.0	2.8	2.5	2.5
Honduras.....	.4	.3	.3	.3	.3	.3
Jamaica.....	1.6	1.3	1.8	1.5	1.7	1.6
Mexico.....	24.2	34.7	36.0	36.0	32.0	36.0
Nicaragua.....	.5	.6	.3	.4	.4	.4
Panama.....	.7	1.1	1.3	1.0	1.0	1.0
Trinidad and Tobago.....	4.0	3.6	3.0	3.0	3.0	3.0
Other 2/.....	.4	.4	.4	.4	.4	.4
Total.....	82.0	91.8	96.9	89.7	89.6	96.7
South America:						
Bolivia.....	3.1	3.2	2.8	3.0	3.0	3.0
Brazil.....	234.0	283.0	314.0	296.0	352.0	345.0
Colombia.....	30.5	31.5	32.3	33.5	36.0	38.0
Ecuador.....	72.5	78.0	85.0	95.0	83.0	80.0
Peru.....	4.6	5.7	6.8	7.0	7.0	7.0
Surinam.....	.1	.1	.1	.1	.1	.1
Venezuela.....	16.6	16.7	15.1	12.5	13.5	14.0
Total.....	361.4	418.2	456.1	447.1	494.6	487.1
Africa:						
Angola.....	.2	.2	.2	.2	.2	.2
Cameroon.....	81.5	106.9	106.6	123.7	118.0	120.0
Comoro Islands.....	.1	.1	.1	.1	.1	.1
Congo.....	2.4	2.5	2.5	2.5	2.5	2.5
Equatorial Guinea.....	5.0	5.0	8.0	6.0	8.0	9.0
Gabon.....	3.5	3.2	4.4	3.5	3.5	3.5
Ghana.....	324.3	271.3	265.0	296.0	260.0	265.0
Ivory Coast 3/.....	232.4	303.6	312.0	379.0	405.0	445.0
Liberia.....	3.1	3.5	3.7	4.0	4.4	4.4
Madagascar.....	1.7	1.4	1.8	1.8	1.8	1.8
Nigeria 4/.....	167.3	205.6	141.0	175.0	159.0	164.0
Sao Tome and Principe.....	4.7	7.0	7.5	7.0	7.0	7.0
Sierra Leone.....	7.3	6.7	7.2	11.0	9.0	10.0
Tanzania.....	.8	.8	.7	.7	.7	.7
Togo 3/.....	15.5	16.0	14.0	15.0	15.0	16.0
Uganda.....	.1	.3	.1	.1	.1	.1
Zaire.....	4.1	4.7	4.0	4.0	4.0	4.0
Total.....	854.0	938.8	878.8	1,029.6	998.3	1,053.3
Asia and Oceania:						
Fiji Islands.....	.1	.1	.1	.2	.2	.2
Indonesia.....	4.6	4.0	6.0	6.2	7.0	7.5
Malaysia.....	17.3	22.0	27.8	37.3	40.1	50.0
Papua New Guinea.....	27.8	29.1	27.0	30.0	27.0	30.0
Philippines.....	2.9	3.1	3.3	3.4	3.4	3.4
Solomon Islands.....	.1	.2	.2	.2	.2	.2
Sri Lanka.....	1.8	1.3	1.5	1.5	1.5	1.5
Vanuatu.....	.8	1.0	.6	.6	.8	.8
Western Samoa.....	1.4	1.3	1.3	1.5	1.5	1.5
Total.....	56.8	62.1	67.8	80.9	81.7	95.1
Grand total.....	1,354.2	1,510.9	1,499.6	1,647.3	1,664.2	1,732.2

1/ Estimates refer to an October-September crop year. 2/ Includes Dominica, St. Lucia, Guadeloupe, and Martinique. 3/ Includes some cocoa marketed from Ghana. 4/ Includes cocoa market through Benin.

Foreign Agricultural Service. Prepared or estimated on the basis of official statistics of foreign governments, other foreign source material, reports of Agricultural Attaches and Foreign Service Officers, results of office research and related information.

WORLD COCOA BEAN SUPPLY--DEMAND AND APPARENT STOCK CHANGE, 1949/50-1981/82

Oct-Sept. season	Production 1/		Grind 2/	New York spot	
	Gross	Net		Apparent	Accra cocoa
	: stock change:			bean prices 3/	
	-----1,000 metric tons-----			cents/lb	
1949/50.....	768	760	789	-29	29.0
1950/51.....	806	798	756	+42	36.7
1951/52.....	647	641	726	-85	35.2
1952/53.....	809	801	809	-8	34.2
1953/54.....	786	778	744	+34	56.5
1954/55.....	786	778	731	+47	41.4
1955/56.....	836	828	837	-9	28.8
1956/57.....	898	889	919	-30	27.2
1957/58.....	761	753	858	-105	43.5
1958/59.....	899	890	874	+16	38.0
1959/60.....	1,043	1,033	931	+102	29.9
1960/61.....	1,164	1,152	1,026	+126	23.5
1961/62.....	1,125	1,114	1,120	-6	21.9
1962/63.....	1,162	1,150	1,154	-4	23.9
1963/64.....	1,239	1,227	1,194	+33	24.1
1964/65.....	1,491	1,476	1,340	+136	18.4
1965/66.....	1,220	1,208	1,388	-180	23.1
1966/67.....	1,336	1,323	1,386	-63	27.5
1967/68.....	1,352	1,338	1,410	-72	30.9
1968/69.....	1,236	1,224	1,353	-129	45.1
1969/70.....	1,423	1,409	1,355	+54	37.3
1970/71.....	1,493	1,478	1,438	+40	29.2
1971/72.....	1,572	1,556	1,567	-11	29.0
1972/73.....	1,406	1,392	1,551	-159	55.5
1973/74.....	1,458	1,443	1,490	-47	91.2
1974/75.....	1,542	1,527	1,471	+56	82.7
1975/76.....	1,511	1,496	1,536	-40	92.0
1976/77.....	1,354	1,340	1,386	-46	189.8
1977/78.....	1,511	1,496	1,409	+87	4/ 147.7
1978/79.....	1,500	1,485	1,464	+21	154.3
1979/80.....	1,647	1,631	1,500	+131	123.5
1980/81.....	1,664	1,647	1,564	+83	90.6
1981/82 forecast.....	1,732	1,715	1,610	+105	--

1/ FAS data. An adjustment of 1 percent for loss in weight is made to arrive at a net production figure. 2/ Gill & Duffus data. Calendar year grind, refers to last year of crop year. 3/ Average for October-September year. 4/ Beginning October 1977, all price data refer to the average of the daily closing price of the nearest 3 active futures trading months on the New York market.

Foreign Agricultural Service. Prepared or estimated on the basis of official statistics of foreign governments, other foreign source material, reports of Agricultural Attaches and Foreign Service Officers, results of office research and related information.

October 1981

Commodity Programs, FAS, USDA

NEW YORK COCOA BEAN FUTURES PRICES, 1965-81 ^{1/}
(In cents per pound)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
1965.....	20.8	18.7	15.7	15.3	14.4	12.7	11.3	14.3	16.1	16.4	17.6	20.4	16.1
1966.....	21.3	21.1	21.8	23.3	22.8	23.4	25.8	25.7	22.3	22.6	21.9	24.5	23.0
1967.....	25.5	27.0	26.3	25.2	25.2	25.6	24.8	25.8	27.4	26.6	28.2	28.3	26.3
1968.....	28.8	27.3	27.3	27.6	27.2	26.7	27.2	28.6	34.2	36.5	42.3	44.7	31.5
1969.....	40.5	39.3	38.7	38.1	37.9	39.0	41.2	39.9	39.3	40.5	41.8	38.4	39.6
1970.....	33.4	29.5	29.6	28.8	26.2	25.7	27.7	32.7	33.1	31.4	29.6	28.6	29.7
1971.....	23.6	24.7	24.0	24.3	22.7	24.0	25.7	26.4	24.4	22.2	21.7	21.4	23.8
1972.....	23.8	24.5	25.9	26.0	27.4	27.3	28.9	30.3	32.2	32.7	32.1	32.7	28.7
1973.....	31.9	33.7	37.8	42.0	51.3	52.7	70.0	64.4	59.8	57.3	51.8	51.8	50.4
1974.....	51.3	60.0	70.4	85.5	86.4	75.4	79.6	79.0	80.0	82.6	76.0	64.9	74.3
1975.....	64.4	66.6	62.6	54.9	47.9	44.0	53.6	53.5	54.2	56.0	56.0	60.4	56.2
1976.....	63.0	65.7	65.6	75.9	82.7	89.8	90.3	97.3	110.7	117.7	135.3	137.0	94.3
1977.....	154.4	172.8	183.4	162.2	170.0	195.1	200.9	179.7	177.8	159.5	160.3	148.3	172.0
1978.....	131.2	128.9	153.9	153.5	140.6	134.6	142.6	150.8	168.6	170.3	179.6	175.2	152.5
1979.....	162.8	155.6	149.0	142.5	147.4	152.1	139.6	135.8	141.4	134.8	131.4	139.3	144.3
1980.....	139.1	142.4	136.0	127.9	113.5	108.6	106.2	99.3	103.6	100.9	93.7	91.2	113.5
1981.....	92.1	88.8	92.5	91.6	82.6	69.6	88.0	96.5	100.6	-	-	-	-

^{1/} Average of the daily closing price of the nearest three active futures trading months on the New York market.

Source: New York Journal of Commerce.

October 1981

Commodity Programs, FAS, USDA

COCOA BEAN Futures Prices

Cents/lb

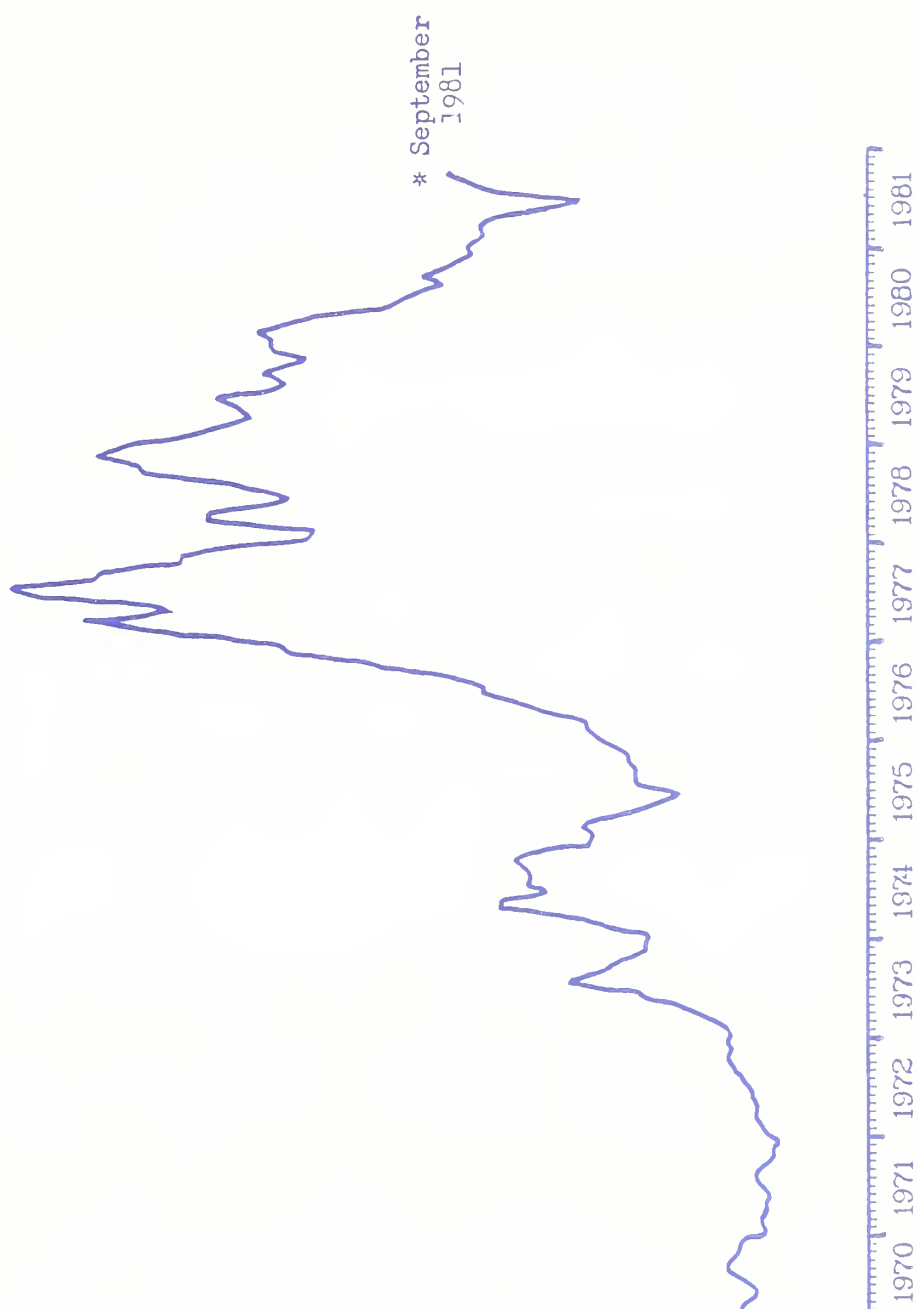
200

150

100

50

0



* September
1981

Monthly average of the daily closing price of the nearest three active futures trading months on the New York market.

TEA

World tea production in 1981 is forecast at a record 1.85 million tons, up slightly from the 1980 harvest of 1.83 million tons. A very weak market situation exists at present as consumer demand has stagnated and prices have fallen. At the same time producer and distributor costs have risen rapidly. The current weakness has led to a renewed effort by producers to establish a new International Tea Agreement with export quotas.

Production

The bumper 1981 tea crop is due largely to production increases in Bangladesh, Sri Lanka, China, Kenya, Turkey and Indonesia. The good crop prospects in these producing countries more than offset the expected reduced output in India, the world's largest producer.

Adverse weather during the first half of 1981 in India and a slowing down in fertilizer usage because of its high price, and financial difficulties faced by many tea companies, are the main reasons for the likely shortfall in 1981 Indian tea production. Given normal weather between now and the end of the year, total 1981 production is expected to be around 560,000 tons. In contrast, production is expected to be up in Bangladesh and Sri Lanka, the other major producers in south Asia. This year's tea crop in Sri Lanka, in particular, shows a good increase over the drought reduced 1980 outturn. Bangladesh expects a record outturn of 43,500 tons, up 9 percent over 1980 production.

Tea production in Africa is also expected to be up in 1981, with improved crops anticipated in Kenya, Malawi and Mozambique. Recent above average precipitation in Kenya should improve production during the second half of 1981. This, combined with expansion of tea acreage in Kenya, is expected to result in a tea crop of 94,000 tons or almost one-half of Africa's total output.

China and the USSR, the world's second and fourth largest tea producers, are expected to produce 1981 harvests of 340,000 tons and 115,000 tons respectively.

Consumption

Less than half the tea produced in the world is exported by producing countries. World tea exports in 1980 were estimated to have exceeded the record 1979 level of 822,000 tons as larger shipment from India and China more than offset reductions by Sri Lanka. Very little if any further increase in exports is likely in 1981, and exports could decline slightly, as tea faces continued strong competition, especially in developed nations--from coffee, soft drinks, and related beverages. Tea is the most popular beverage in many developing nations. However, declining tea and sugar prices could help offset rising retail costs, and thereby stimulate some increase in consumption in these markets.

U.S. tea imports in 1980 at 83,819 tons valued at \$129.9 million were marginally up from 1979 imports of 79,239 tons valued at \$125.3 million. Imports through August 1981 totaled 61,508 tons valued at \$92.9 million compared with 59,232 tons valued at \$90.0 million for the same period during 1980. High interest rates continue to discourage inventory buildups.

Prices

Tea prices have declined considerably in recent months under pressure of a world record crop and increased Chinese sales. Prices are now so low that some of the better quality teas are being auctioned at close to or less than their production costs.

The price spread between the highest and lowest grade teas has narrowed as the trade has concentrated on buying less expensive middle quality teas to produce their blends. The cost of the tea in packets of blended tea currently accounts for more than half of the retail price, leaving little for processing, packaging, marketing and profits. Prices may remain low for the remainder of this year, however, some increase can be expected next year.

International Tea Agreement

Low prices have rekindled an interest in an International Tea Agreement. There has not been an agreement for 25 years.

At a meeting earlier this year a majority of producing countries agreed on using a 5-year period, with 1976 as the cut-off, to assess production trends for the purpose of fixing export quotas under any agreement. However, Kenya and Tanzania preferred a 7-year period, with 1974 as the base year. While most producers agreed on the need for a buffer stock, there were differences of opinion on how it would be financed. There was agreement on the need to fix a minimum quality standard for all export categories of tea, including leaf, dust and value added teas.

Tea: Production in Major Producing Countries
Annual 1977 to 1981
(1,000 Metric tons)

<u>Region and Producer</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>September 1981 (Estimate)</u>
<u>Asia:</u>					
Bangladesh.....	38.0	38.0	35.9	39.9	43.5
China, Mainland.....	252.0	268.0	277.0	330.0	340.0
India.....	556.3	563.8	551.9	577.0	560.0
Indonesia ^{1/}	64.3	73.2	73.3	78.9	81.0
Japan.....	102.3	104.7	98.0	102.3	105.0
Malaysia.....	3.2	3.0	3.2	3.3	3.3
Sri Lanka.....	208.6	199.0	206.4	191.4	205.0
Taiwan.....	26.3	25.9	27.1	24.5	26.0
Vietnam ^{2/}	5.0	5.0	5.0	5.0	5.0
<u>Total Asia</u>	<u>1,256.0</u>	<u>1,280.6</u>	<u>1,277.8</u>	<u>1,352.3</u>	<u>1,369.8</u>
<u>Africa:</u>					
Algeria.....	1.5	1.5	1.5	1.6	1.6
Cameroon.....	1.0	1.8	2.0	2.0	2.0
Kenya.....	86.3	93.4	99.3	89.9	94.0
Malawi.....	31.7	31.7	32.6	29.9	32.0
Mauritius.....	4.7	5.1	5.1	4.3	5.0
Mozambique.....	14.0	18.1	19.7	19.0	19.5
Rwanda.....	5.4	5.3	5.8	7.0	8.0
Tanzania.....	16.7	17.3	17.9	17.1	17.0
Uganda.....	15.2	10.9	1.8	1.5	1.3
Zaire.....	4.5	4.0	3.0	3.0	3.0
Zimbabwe.....	6.6	8.7	10.2	10.0	10.5
<u>Total Africa</u>	<u>187.6</u>	<u>197.8</u>	<u>199.0</u>	<u>185.3</u>	<u>193.9</u>
<u>Middle East</u>					
Iran.....	20.0	25.0	20.0	19.0	17.0
Turkey.....	84.1	86.2	102.0	105.0	110.0
<u>Total Middle East</u>	<u>104.1</u>	<u>111.2</u>	<u>122.0</u>	<u>124.0</u>	<u>127.0</u>
<u>Oceania</u>					
Papua New Guinea.....	6.5	7.0	7.0	7.1	7.1
<u>Total Oceania</u>	<u>6.5</u>	<u>7.0</u>	<u>7.0</u>	<u>7.1</u>	<u>7.1</u>
<u>South America</u>					
Argentina.....	33.5	30.0	31.3	36.5	27.5
Brazil.....	7.7	9.2	9.4	10.0	10.0
Ecuador.....	1.3	1.5	1.5	1.3	1.0
Peru.....	2.5	2.5	3.0	3.0	3.0
<u>Total South America</u>	<u>45.0</u>	<u>43.2</u>	<u>45.2</u>	<u>50.8</u>	<u>41.5</u>
USSR.....	106.4	112.2	115.0	112.0	115.0
<u>GRAND TOTAL</u>	<u>1,705.6</u>	<u>1,751.0</u>	<u>1,766.0</u>	<u>1,831.5</u>	<u>1,853.3</u>

^{1/} Estate Production only.

^{2/} South Vietnam only.

Source: Based on official country statistics, U.S. agricultural counselor and attache reports, results of office research, field travel, and related information.

September, 1981

Foreign Production Estimates Division, FAS, USDA

Tea: Production and Planted Area in Selected
Major Producing Countries
(1,000 Metric Tons)

<u>Producer</u>	<u>Unit</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>September 1981 (Estimate)</u>
Argentina					
Production	1,000 MT	30.0	31.3	36.5	27.5
Area Planted	1,000 Ha	43.0	40.7	41.0	41.0
Bangladesh					
Production	1,000 MT	38.0	35.9	39.9	43.5
Area Planted	1,000 Ha.	42.5	42.5	42.5	42.5
China, Mainland					
Production	1,000 Mt	268.0	277.0	330.0	340.0
Area Planted	1,000 Ha	NA	NA	NA	NA
India					
Production	1,000 MT	563.8	551.9	577.0	560.0
Area Planted	1,000 Ha	373.7	373.7	377.0	380.0
Indonesia ^{1/}					
Production	1,000 MT	73.2	73.3	78.9	81.0
Area Planted	1,000 Ha.	67.9	66.7	66.7	67.0
Japan					
Production	1,000 MT	104.7	98.0	102.3	105.0
Area Planted	1,000 Ha.	60.0	60.7	61.0	61.5
Kenya					
Production	1,000 MT	93.4	99.9	89.9	94.0
Area Planted	1,000 Ha.	72.0	74.4	76.6	79.0
Malawi					
Production	1,000 MT	31.7	32.6	29.9	32.0
Area Planted	1,000 Ha	17.8	18.2	18.3	18.5
Sri Lanka					
Production	1,000 MT	199.0	206.4	191.4	205.0
Area Planted	1,000 Ha.	242.9	244.1	244.1	244.2
Turkey					
Production	1,000 Mt	86.2	102.0	105.0	110.0
Area Planted	1,000 Ha.	52.9	53.6	53.8	54.5
USSR					
Production	1,000 MT	111.2	115.0	112.0	115.0
Area Planted	1,000 Ha.	77.4	78.4	78.4	78.4
TOTAL ABOVE					
Production	1,000	1,599.2	1,623.3	1,692.4	1,713.0
% of world		91.3	91.9	92.4	92.4
WORLD TOTAL PRODUCTION	1,000 MT	1,751.0	1,766.0	1,831.1	1,853.3

^{1/} Estate production and area only.

Source: Based on official country statistics, U.S. agricultural counselor and attache reports, results of office research, field travel, and related information.

September, 1981

Foreign Production Estimates Division, FAS, USDA

Robert D. Barry and Fred Gray, Agricultural Economists
Economic Research Service

1982 Agricultural Outlook Conference, Session 13
Washington, D.C.

Tuesday, November 3, 1981



INTRODUCTION

In a sense, today is the best of times. World sugar output in 1981/82 is likely to advance to a new record exceeding 1977/78's 92.5 million metric tons. The one-year increase in output will probably be more than 6.4 million tons, the most since 1964/65 when production rose 9.6 million. In the United States, sugar production in 1981/82 will be second only to the 1975/76 record.

It is also a time of 12-cent sugar, a world price that leads us perilously close to penury. And if it is not the worst of times, it certainly is among the most fateful.

Competitive corn sweeteners are pressing at the gate. Sugar production costs are pressing from within. And farther off, low-cost low caloric sweeteners and crystalline high fructose corn sirups are casting a shadow on sugarland.

More than ever, we are looking at institutional arrangements such as the International Sugar Agreement, to protect us from our "best" superabundant selves. We are also looking at national support programs. The problem: how to ensure efficiency, how to guarantee equity, in the national and international interest. More than economics will influence our actions to establish a balance among competing ends.

The outlook for U.S. sugar is perhaps more critical than at any other time. This season's sugar production may well be the highest we shall see, from here on. Obviously by "critical" I do not mean merely the near-term effects of world sugar supply and demand in 1981/82 and, also important, 1982/83. The path outlined by possible U.S. sugar legislation and programs will be of enduring moment, with decisive effects on our domestic sweetener market, and on the sources of supply for that market, both domestic and foreign.

This talk shall cover the 1981 situation and, to the extent possible in a world of multiple price and policy possibilities, the 1982 outlook. We shall also give a capsule outlook for important sugar-using tropical beverages coffee, tea, and cocoa, which the United States imports to the extent of around \$5 billion.

THE SWEETENER SITUATION

SUGAR

Prices: The price of raw sugar (cif, duty-paid, New York) is likely to average 15-16 cents in October, starkly different from October 1980 when the price topped 41.1 cents a pound. Today's price, about 45 percent below the 1980 average of 30.1 cents reflects the turnaround in world sugar availability from scarce supplies in 1979 to apparent abundance in late 1981. For the first time since 1979, import fees have been triggered--one cent on September 11, revised to 1.53 cents a pound effective October 1. The world price (Caribbean) and the New York raw sugar price differential is now about 3.5 cents a pound, triple that for the 4th quarter 1980.

Wholesale list prices for refined sugar have closely followed changes in the raws. The differential between wholesale refined and raw sugar prices have been stable, and currently are around 11 cents, about the same as the calendar 1980 average. In the Northeast, September prices were about 26 cents a pound compared with 48 cents in September last year, and an average of 41 cents for all of 1980. Retail prices averaged 34.6 cents a pound in September, the ninth consecutive month of decline since the 1980 high of 56.5 cents in December.

While sugar prices have been declining in 1981, retail prices of sugar-containing products have been increasing, largely reflecting the rising cost of inputs other than sugar. According to the Bureau of Labor Statistics (BLS), retail sugar prices decreased nearly 35 percent from January to August. In contrast the Consumer Price Index (CPI) for 14 sweetener-containing foods and beverages rose 4.0 percent between January and August 1/, with price increases ranging from a low of 2.5 percent for cola drinks to a high of 6.0 percent for cereal, and an average 4.0 percent for seven flour-containing products. In 1980, retail sugar prices rose 69 percent between January and August, while prices of products increased only 6.4 percent.

Production: U.S. production of cane and beet sugar (excluding Puerto Rico) in crop year 1981/82 is estimated at about 6.2 million tons, up 7 percent from last season but 725,000 tons short of the record 1975/76 output. On a calendar-year basis, 1981 sugar production is estimated at 6.1 million tons, 6.3 percent higher than in 1980. The increased output in 1981/82 reflects the higher prices at planting time that encouraged expanded acreage (especially sugarbeets), as well as improved cultivation practices and good weather leading to higher yields. The decline in production capacity over the last 6 years prevented sugar production from attaining higher levels. Since the 1975/76 season, 11 beet processing plants and 17 cane mills (excluding Puerto Rico) have been closed down.

1/ Measured by the simple average of the BLS indexes for the 14 product categories.

Sugarbeet harvested area in 1981/82 is estimated at 1.23 million acres, 3 percent above last season. Prospective U.S. beet yields are about 20.9 tons an acre, up one ton or 5.6 percent from 1980/81. In the Red River Valley (Minnesota-North Dakota), the largest nonirrigated producing area, yields and production are expected to average 17.0 tons an acre, up or 16 percent from 1980 and up 8 percent from 1979. Beet sugar production from the 1981/82 crop is expected to be 3.3 million tons, raw value equivalent, up over 7 percent from 3.08 million in 1980/81.

Sugarcane area (including seed) for harvest will likely total around 744 thousand acres in 1981/82, 2.2 percent above the previous season. Acreage increases were reported in all four production States--Florida, Louisiana, Texas, and Hawaii. The projected U.S. average cane yield for the 1981/82 crop is 39.3 tons an acre, up 2.5 tons or 6.8 percent from last season. Cane yields are forecast to exceed last season's level in all 4 States. Total cane sugar production is estimated at 2.9 million tons raw value, up 6.1 percent from 2.7 million in 1980/81.

Utilization: Calendar 1981 sugar deliveries, based on the trend for the most recent 12 months, will likely total around 9.8 million short tons (raw value) compared with 10.19 million in 1980.

The displacement of sugar by high fructose corn sirup (HFCS) is most pronounced in the area of liquid sugar deliveries. These fell 15 percent in the first half of 1981 from a year earlier. Most of the liquid sugar deliveries are for use in beverages which took 21 percent of total sugar deliveries in the first-half 1981, down from 26 percent 3 years ago. Lower sugar deliveries occurred also in cereal and bakery products (-7.7 percent) processed foods (-6.5 percent), dairy products (-4.1 percent) and other commercially prepared food products (-14 percent). Deliveries for use in confectionery--where it is more difficult to substitute HFCS for sugar--increased nearly 4 percent in first-half 1981 from the same period in 1980.

U.S. consumption of refined sugar (approximated by sugar deliveries) will be about 9.12 million tons in 1981 (9.8 million, raw value). With a population of 227.7 million, U.S. per capita refined sugar use is estimated at 79.7 pounds, a decrease of 4 pounds from the previous year.

Trade: Calendar 1981 imports are expected to total around 4.6 million short tons, about 100,000 tons below 1980. January-July imports totaled 2.65 million tons, up 2.6 percent from a year ago, but imports are expected to fall off in the last part of 1981, when the new and larger 1981/82 crop is harvested and processed. Argentina, Australia, Brazil, Guatemala, Dominican Republic, and the Philippines are our most important suppliers, providing nearly 70 percent of U.S. imports during January-July 1981. Despite the 1 million ton decline in U.S. sugar consumption during 1979-81, imports have been maintained because of increased U.S. exports of refined sugar.

U.S. exports of sugar could be a record 1 million tons in 1981, up from 650,000 tons in 1980 and only 18,000 tons in 1979. Through July, 626,000 tons of sugar (raw value) had been exported. Title 19 U.S. Code 1313 permits the "drawback" or refund of duties and fees paid by U.S.

importers of raw sugar, for a period of up to 3 years, when an equivalent amount of sugar is re-exported. Exports through August 1981 have gone to Mexico (149,000 tons), Peru (114,000 tons), Turkey (75,000 tons), India (65,000 tons) and Venezuela (51,000 tons). About 96 percent has been in the form of refined sugar. Exports will continue through the fourth quarter despite the imposition of 1.53 a cents a pound import fee effective October 1, because a considerable volume of exports had been contracted for earlier in the year.

Stocks: Domestic sugar stocks on September 1, 1981 totaled 1.50 million short tons (raw value), down 350,000 tons from last year. Refiners' stocks are down by 232,000 tons. Mainland sugarcane processors stocks have dropped nearly 258,000 tons. Only beet processors refined sugar stocks have increased, by nearly 151,000 tons from a year ago, partly as a result of increased production.

Higher U.S. production, slightly lower imports, lower domestic utilization, and larger exports could result in a decrease in overall U.S. stocks by an estimated 200,000 tons next January 1, 1982, to 2.87 million tons, the lowest since 1974.

CORN SWEETENERS

Prices: Corn sweetener prices have been declining in 1981, following the fall in sugar prices. The temporary increase in glucose corn sirup prices in late summer reflected lack of processing capacity. Although 1981 corn sweetener prices are down from 1980, they still range from one-third to nearly double the calendar 1979 level.

The September price of glucose corn sirup in the Chicago-West marketing territory was 15.9 cents a pound (dry basis--db), down 5 percent from January and 10 percent from last year's high of 17.6 cents in November. Price trends in other marketing territories were similar. In late September glucose corn sirup was selling for 16.5 cents a pound in the Northeast and 19.8 cents in California, reflecting the long shipping distance to the West Coast from Mid-west corn refineries. The calendar 1981 price of glucose corn sirup in Chicago-West will probably average around 16 cents a pound, still up from the calendar 1980 average of 14.4 cents.

Dextrose prices have declined almost 20 percent from January levels, to around 27-29 cents depending on the market area. Calendar 1981 dextrose prices in Chicago-West are expected to average around 30 cents a pound compared with 29.15 cents in 1980. The California average is estimated at about 31.5 cents, also about a cent above the 1980 average of 30.6 cents a pound.

The September list price for 42-percent HFCS in the Chicago-West Marketing Territory was 19.72 cents, nearly 18 percent less than in January, while 55-percent fructose HFCS was selling for 23.25 cents a pound, over 20 percent less than in February. In California, prices are at levels near

Chicago-West prices, despite the long shipping distance from Midwest HFCS supplies, probably because of increased competition from local HFCS suppliers. In September, 42 percent-fructose HFCS was selling for 20.21 cents a pound while 55 percent-fructose sirup was selling for 24 cents.

Prices of corn wet-milling byproducts have significantly declined in 1981. Between January and August this year, the price of corn gluten meal (60 percent protein--Chicago) fell 19 percent, corn gluten feed (21 percent protein--Chicago) fell 23.5 percent, and crude corn oil (Decatur, Illinois) declined 15 percent. Still, corn prices (No. 2 yellow, Chicago) have declined even more, down nearly 24 percent from January to \$2.71 in September. Thus, corn wet-millers, importantly dependent on byproduct sales, were able to somewhat offset the drop on byproduct corn prices.

This year's prospective record-large corn crop of 8.08 billion bushels, up 22 percent from the drought reduced 1980 crop, means that corn prices at best will likely remain near recent levels. However, price declines may be limited by the recently announced 1981/82 loan rate for corn of \$2.40 a bushel.

Production: The U.S. wet milling grind in 1981 is expected to top 500 million bushels, up about 35 million from 1980. Most of the increase is the result of rapid expansion in shipments of HFCS.

Total domestic shipments of corn sweeteners for food use in 1981 are expected to total around 5.15 million short tons (dry basis), an increase of 11 percent from 4.65 million in 1980. Most of the increase is coming from a 20 percent rise in HFCS sales this year, particularly for 55-percent-fructose HFCS.

HFCS sales in 1981 may total around 2.65 million short tons (dry basis), up from an estimated 2.2 million in 1980. Trade sources report there has been some weakening in the increase in HFCS sales in recent weeks because of declining sugar prices. HFCS use in beverages reportedly rose sharply in 1981 by 30 percent to around 1.2 million tons.

Glucose corn sirup shipments for food use in 1981 are expected to increase slightly to near 2.1 million tons (dry basis), up from around 2.05 million in 1980. The growth of glucose corn sirup shipments in recent years has been slow, indicating use in commercially prepared foods and beverages is close to saturation.

Dextrose shipments for food use may total around 400,000 tons, about the same as in 1980 (revised downward from 425,000 tons) and 1979. Dextrose sales have been relatively static in recent years, essentially reflecting a limited market at prevailing dextrose prices. Moreover, corn sweetener firms have been reluctant to expand dextrose processing capacity because of limited potential for sales or profits relative to HFCS or glucose corn sirup.

Per capita consumption of corn sweeteners will approach 45 pounds (dry basis) in 1981, about 4 pounds above 1980. Most of the increase will be in HFCS, from 19 pounds to around 23 pounds. Glucose corn sirup intake may reach 18.3 pounds, up from 18 pounds. HFCS consumption is now nearly 5 pounds larger than glucose corn sirup use. Per capita dextrose use is not expected to change much from 1980's 3.5 pounds (dry basis).

OTHER SWEETENERS

Honey production in 1981 may total around 200 million pounds, about the same as in 1980. Imports estimated at 60 million pounds will be near levels of recent years. U.S. honey exports are ahead of the 1980 pace and could total near 10 million pounds, the highest level since 1973 when 17.6 million pounds were exported. Domestic disappearance of honey is expected to approximate last year's 230 million pounds.

Both world and U.S. production are not expected to increase much, if any, with global demand continuing near last year's level. Honey prices have remained relatively firm.

U.S. pure maple sirup production in 1981 totaled 1.41 million gallons, up 45 percent from 1980's 973,000. While the volume of sap was not much larger than in 1980, the sap was much sweeter, with a higher sugar content. U.S. maple sirup producers received a record \$18.10 a gallon this season up from \$16.20 in 1980, despite a much larger output in 1981. Maple sirup imports, at 7.3 million pounds during January-August, are running 20 percent ahead of last year's pace. At this rate, U.S. imports in 1981 will exceed 9.4 million pounds. If imports exceed 10 million pounds, which is possible, it would be the highest level since the 10.4 million of 1970.

On July 15, the Food and Drug Administration (FDA) approved aspartame a low-caloric sweetener, for use in cold cereals, drinks mixes, instant coffee and tea, gelatins, puddings and pie fillings, dairy products, whipped toppings, and chewing gum. Aspartame also will be available in table form for home use. Several companies are currently testing aspartame-containing products, but it will take some time for industrial users to reformulize it into their products. Aspartame-sweetened products are expected to begin showing in U.S. markets around the middle of 1982.

On June 26th, the Senate allowed saccharin (a non-caloric sweetener) to continue to be sold for another 2 years (to June 30, 1982). A Congressional ban, preventing FDA from prohibiting saccharin sales, had been in effect since 1977, and would have expired June 30. Congress approved the original ban after FDA, as required by the Delaney clause, moved to take saccharin off the market. The clause requires removal from the market, of any additive that is unsafe or found to cause cancer in laboratory animals. What effect the new commercial availability of aspartame will have on saccharin's legal availability for food use remains to be seen. Another artificial sweetener, cyclamate, continues to be prohibited after it was banned effective 1970.

THE SWEETENER OUTLOOK

SUGAR

The outlook for U.S. sugar production in 1982 is dominated by a range of (1) world and domestic price possibilities, and (2) the continuing erosion of the U.S. sugar market by HFCS. The extent to which the shrinkage of the domestic market will be shared between U.S. and foreign sugar suppliers will depend on (1) world price levels and (2) the existence of a U.S. sugar program, whether mandated by Congress or implemented at the discretion of the Administration (under permanent authority given by the Agricultural Act of 1949).

On September 17, the Senate passed S. 884, the Food and Agriculture Act of 1981, with provisions for a sugar program. The bill would provide a loan program at 18.0 cents a pound raw sugar for 1982/83 sugar production, rising at a minimum 0.5 cents a pound each crop year, so that the loan rate would be at least 19.5 cents a pound in the final year 1985/86. Loans are to be made available at the beginning of the fiscal year and mature at the end of the fiscal year so that there is practically no direct cost to the Treasury resulting from the sugar loan program. For 1981/82 sugar, the bill also requires a purchase agreement at 19.6 cents a pound (reportedly to be corrected, because of a technical oversight, to 18.0 cents). A similar bill in the House, but with a maximum loan rate escalator of 0.5 cents a pound each year between 1983/84 and 1985/86 starting from an 18.0-cent base in 1982/83, was narrowly defeated on October 15. A compromise sugar title possibly will emerge from the Senate/House Conference Committee.

If it is decided to have a sugar program, some administrative issues, perhaps no less critical than the loan or purchase rates, would need to be resolved. Among these are:

- o The level of protection or "cushion" above the purchase or loan level so as to preclude or minimize the quantity of sugar that might be forfeited or sold to the Government.

- o The provisions of purchase and loan programs, including length of loans, and whether loan interest should be charged in the event of loan forfeiture.
- o The timing of a new presidential proclamation to establish import fees on sugar (the likely tool, based on Section 22 of the Agricultural Adjustment Act of 1933, to defend a sugar program).
- o Consideration of an increase in the import duty on sugar, currently 0.625 cents a pound raw value, up to its maximum of 2.8125 cents a pound. Import fees on sugar, limited to 50 percent ad valorem, might not be sufficient to defend the sugar market price objective when world sugar prices are very low.
- o The level and method of adjusting freight/handling charges between the Caribbean and New York, for use in import fee calculations.
- o Consideration of eliminating the Generalized System of Preferences (GSP) on imported sugar for designated beneficiary countries, because of its tendency to undermine the price protection provided by duties.

Without a sugar program, U.S. sugar production will be subject to world price prospects. Assuming the 1981/82 world output is an abundant 94 or so million metric tons so that a stocks rebuilding of about 2 million tons is made possible, prices are likely to remain low for the near term, and then become increasingly dependent on the outlook for the next crop. With the possibility of little or no increase in world sugar production in 1982/83, and modest additions to stocks, world prices for calendar 1982 might average 14 cents a pound.

Such a price will likely bear heavily on U.S. sugar plantings. U.S. sugarbeet acreage for the 1982/83 crop could fall 15 percent. Combined with a return to more normal sugar yields from the high levels in virtually all growing areas during 1981, the reduced acreage could mean beet sugar production in 1982/83 falling about 500,000 tons or 17 percent from the 1981/82 season, to 2.75 million tons (raw equivalent).

The first official indication of the 1982/83 sugarbeet acreage will appear in the March Prospective Plantings report.

Sugarcane harvested acreage could also decline but likely less than 3 percent, with Louisiana cutting back more than the other States. The first indication of sugarcane acreage will be in the January Crop Production-Annual, from statistics on quantity of seedcane planted in 1981.

Assuming base-level yields, the lower acreage will mean a drop in cane sugar production to around 2.65 million tons, down from 2.9 million last season.

Beet and cane sugar production together would add up to 5.4 million tons in 1982/83, around 800,000 tons or nearly 13 percent below 1981/82. Calendar 1982 production, derived in part from the high 1981/82 output, is estimated to fall to about 5.7 million tons, down about 400,000 tons.

U.S. sugar imports in 1982 are expected to be substantially reduced, perhaps by 700,000-800,000 tons. The major reason is the anticipated sharp drop in exports, from an estimated 1 million short tons in 1981 to perhaps a mere 50,000 tons. The availability of drawback will not be sufficient to offset the effect of low world prices and encourage U.S. refiners to import raws in the expectation of being able to export refined sugar profitably. Further, the level of drawback available, currently at nearly 6.2 cents a pound, will itself diminish considerably in September 1982. U.S. imports will fall also because of the continued downtrend in domestic sugar consumption, expected to be down another 200,000 tons to 9.6 million tons in 1982.

An alternative world price scenario might occur with the world price (Caribbean) strengthening because of changes in supply prospects over the next few months. If world prices increased to around 19 cents, this would mean less of a drop in 1982 U.S. sugar production, perhaps only half as much. Drawback exports would continue to be profitable, at least through August 1982, and U.S. exports might approximate 400,000-500,000 tons. Accordingly, U.S. imports of raw sugar would not fall quite as much as in the base forecast.

Both of these scenarios assume the absence of a U.S. sugar program. With a program and a level of support of around 20-21 cents a pound, the encouragement to U.S. sugar production would be at least as great as in the alternative world price scenario. However, if the program were implemented in the context of the base world price scenario of 14 cents, drawback exports would continue to be infeasible and imports would consequently also be low.

DOMESTIC SWEETENER PRICES

Wholesale and retail prices for refined sugar in 1982 will tend to follow the course of domestic raw sugar prices, whether determined by the world market or defended by a U.S. support program. Retail prices from January to August averaged 43.4 cents a pound, and at an estimated 33 cents a pound for September to December, the 1981 price would average about 37.4 cents. Assuming a margin of 17 cents between the domestic raw and retail refined prices, a base world price of 14 cents a pound (Caribbean) in 1982 would translate to about 33 cents retail--close to October 1981 levels.

Corn sweetener prices follow sugar price movements but with more "stickiness" in the downward direction than when sugar prices are moving up. Thus, corn sweetener prices in 1982 may not fall from current levels and could average near the estimated 1981 levels of 24 cents for 42 percent HFCS and 27 cents for dextrose. Glucose, however, appears likely to do better than its 1981 estimated average of 18 cents a pound, by perhaps 2 to 3 cents.

Some seasonal softening in orders for HFCS can be expected in the 4th quarter of this year because of diminished demand for beverages, the largest market for HFCS. But expansion of HFCS and continued takeover of a substantial share of the industrial sugar market will continue to take place over the next several years, based on HFCS's production cost advantage, ability to price at a discount to sugar, and on the assumption that major beverage companies will permit higher percentages of HFCS in the formulation of their products (table 1). About 3 million tons of HFCS (dry basis) will conservatively be utilized in 1982, up about 12 percent from 2.65 million tons in 1981. By 1985, HFCS use is projected at 3.9 million tons. As a percent of total caloric sweetener consumption, HFCS would constitute over 20 percent in 1982, rising to nearly 26 percent by 1985. Glucose use will also grow, largely with population. Dextrose use will likely increase very slowly.

Total corn sweeteners could account for over 43 percent of caloric sweeteners use by 1985, up from an estimated 38 percent in 1982. Obversely, sugar use will likely fade to around 56 percent of all caloric sweeteners in 1985, down from around 61 percent expected in 1982 and 70 percent as recently as 1979. Total sweetener consumption per capita is not expected to rise much, perhaps only 1/2-pound by 1985, and so aggregate caloric sweetener use will advance largely with population growth.

The physical capacity to permit the achievement of the forecast levels of corn sweetener consumption has already been committed. Most of the increased capacity will be from new or expanded plants, but an important part will also derive from higher operating rates for corn wet milling plants. Operating rates are up to around 88 percent from less than 80 percent in 1979, not only adding to capacity but helping to lower unit operating costs.

Industry sources indicate that the higher operating rates have occurred as a result of a shift in corn wet milling production capacity from dextrose and glucose to HFCS, the fastest moving corn sweetener, and from 42-percent HFCS to 55-percent. By 1982, 55-percent HFCS will account for about 56 percent of overall HFCS capacity versus 24 percent in 1979.

The corn wet milling grind may total around 535,000 bushels in 1982, up 7 percent from the 1981 estimate and equivalent to about 6.5 percent of the 1981 corn crop. About 60 percent goes to the manufacture of corn sweeteners; the rest is sold as starch and dextrins. The total does not include the corn dry-milled for corn chips and similar products, nor the corn used to produce industrial alcohol.

COFFEE

U.S. imports of coffee (green and processed) for the first 8 months of 1981 totaled 1.45 billion pounds, down 14 percent from 1980. At this rate, calendar 1981 imports would amount to 2.2 billion pounds compared with 2.47 billion last year. U.S. coffee imports will be higher if roasters decide to continue to rebuild stocks up from this summer's low levels.

With a lower import volume and recently declining green coffee prices, the 1981 dollar value of imports will probably fall short of 1980's nearly \$4.2 billion.

From \$1.28 a pound in January, green coffee prices² decline to \$1.08 in June. Prices strengthened in July in reaction to a freeze in Brazil, but ample stocks going into the large 1981/82 world crop have cushioned the price impact of the Brazilian freeze.

Green prices strengthened in October, likely to around \$1.25 a pound. One reason for the price increase is the recent purchase of large amounts of green coffee by U.S. roasters to replenish inventories and meet seasonal consumer demand. Another factor is the attempt by the International Coffee Organization (ICO) to keep green prices within the \$1.20 to \$1.40 cents a pound range, by adjusting export quotas.

U.S. wholesale prices of roasted coffee in 1981 have been relatively stable. The list price for a 1-pound can of roasted coffee was \$2.53 from January through June. It has since declined to \$2.38 in September, the lowest price since \$2.31 a pound in April 1979.

The U.S. average price for a 1-pound can of roasted coffee in September was \$2.46, down from \$2.78 in January. This is the lowest monthly retail price since \$2.38 in December 1976. With green prices firming and likely increasing slightly in 1982, retail prices are expected to level out and then to rise somewhat in early 1982.

U.S. per capita consumption of coffee in 1981 appears likely to average around 10.2 pounds (green bean equivalent), down slightly from 10.4 pounds last year. Expected increases in coffee consumption as a result of lower retail prices did not show up in the first 8-months of 1981. Trade sources report increased purchases of green coffee in September and October, partly for seasonal reasons and possibly also as a response to lower coffee prices.

^{2/} Composite indicator price as defined in the 1968 International Coffee Agreement.

TEA

U.S. tea imports totaled 136 million pounds (dry leaf basis) during January-August 1981, up 3.7 percent from 131 million during the same period in 1980. At this pace, calendar 1981 tea imports will reach around 190 million tons, up from 185 million in 1980. The dollar value of tea imports for the 8 months of 1981 was \$93 million, up from \$91 million a year ago. The 1981 total is expected to be near 1980's \$130 million.

Retail tea prices generally increased in 1981 with higher handling costs. A package of 48-tea bags cost \$1.61 in New York City in September, up 7 percent from September 1980. Wholesale tea prices have been declining in 1981, from \$1.01 a pound in February-March (average London Auction price) to 80 cents in August. With a record world tea crop being harvested in 1981/82, wholesale prices could weaken further. Tea imports and use should continue to increase.

COCOA AND CHOCOLATE

Total cocoa imports, bean equivalent, totaled 715 million pounds for the first 8 months of 1981, up 40 percent from a year ago. Cocoa bean imports of 411 million pounds were 80 percent above last year. Imports of semiprocessed cocoa and chocolate products of 305 million pounds rose nearly 9 percent. Cocoa butter imports were up 32 percent, unsweetened cocoa up 26 percent, but chocolate liquor imports were down nearly 33 percent.

The cocoa bean grind totaled 315.5 million pounds through September 1981, up 44 percent from a year ago. Lower cocoa butter prices encouraged U.S. manufacturers to sharply increase cocoa butter use. Second, cocoa bean prices declined to levels where manufacturers also decided to produce much of their own cocoa butter by Third, the demand for chocolate increased in 1981.

Based on 8 months of data, total 1981 domestic use of cocoa and chocolate products will increase considerably above 1980's 719 million pounds (GBE). Per capita consumption of cocoa and chocolate would then increase above 1980's 3.3 pounds to 3.4 to 3.7 pounds.

New York cocoa bean prices (the average of the nearest-three active futures trading months on the Coffee, Sugar & Cocoa Exchange) fell from 92 cents a pound in January 1981 to 70 cents in June. Then, the market was lifted by expectations of International Cocoa Organization (ICCO) buffer stocks operations, and cocoa bean prices increased, reaching about \$1.01 a pound in September. In October, prices began slipping to around 97 cents associated with the apparent difficulties of ICCO buffer stock actions. Another reason is that declining cocoa prices have stimulated expansion in the cocoa grind in major cocoa importing countries.

The total value of U.S. imports of cocoa and products in 1981 increased to \$644 million for the first 8 months of 1981, up from \$632 million a year ago. The value of cocoa bean imports increased to \$357 million from \$292 million (22 percent increase) for the first 8 months, while imports of semiprocessed and cocoa and chocolate consumer products dropped about \$53.5 million (-16 percent) to \$287 million.

Looking ahead to 1982, the record world 1981/82 cocoa crop coupled with an expanding global grind--but less than production--means an increase in world stocks for the fifth consecutive crop year. With cocoa prices likely to continue near recent levels, U.S. imports and both total and per capita domestic use appear likely to continue at high levels in calendar 1982.

Table 1 --United States consumption of sweeteners, 1979-80 and estimated 1981-85 1/

Calendar year	Sugar, raw value	Sugar, refined	HFCS, dry basis	Glucose, dry basis	Dextrose, dry basis	Total corn sweeteners, dry basis	Honey	Edible sirups	Total caloric sweeteners
----- Million short tons -----									
1979	10.756	10.052	1.731	2.005	0.400	4.136	0.116	0.044	14.348
80	10.189	9.522	2.174	2.05	0.400	4.624	0.099	0.045	14.300
81	9.800	9.159	2.65	2.10	0.40	5.15	0.115	0.045	14.469
82	9.600	8.972	2.96	2.13	0.41	5.50	0.116	0.045	14.633
83	9.400	8.785	3.26	2.16	0.42	5.84	0.119	0.046	14.790
84	9.200	8.598	3.56	2.19	0.43	6.16	0.119	0.046	14.943
85	9.000	8.411	3.86	2.22	0.44	6.52	0.119	0.047	15.097

United States consumption of sweeteners, 1979-80 and estimated 1981-85--Continued

Calendar year	Percent of total caloric sweeteners				Population: Total corn sweeteners	Per capita consumption								
	Sugar	HFCS	Glucose	Total corn sweeteners		Sugar, refined	HFCS	Glucose	Dextrose	Total corn sweeteners	Honey	Edible sirups	Total caloric sweeteners	
----- Percent ----- Million ----- Pounds -----														
1979	70.0	12.1	14.0	28.8	225.055	89.3	15.4	17.8	3.6	36.8	1.0	0.4	127.5	
80	66.6	15.2	14.3	32.3	227.658	83.7	19.1	18.0	3.5	40.6	0.9	0.4	125.6	
81	63.3	18.3	14.5	35.6	229.8	79.7	23.1	18.3	3.5	44.8	1.0	0.4	125.9	
82	61.3	20.3	14.6	37.6	232.0	77.3	25.5	18.4	3.5	47.4	1.0	0.4	126.1	
83	59.4	22.0	14.6	39.5	234.2	75.0	27.8	18.4	3.6	49.9	1.0	0.4	126.3	
84	57.6	23.8	14.7	41.4	236.5	72.7	30.1	18.5	3.6	52.3	1.0	0.4	126.3	
85	55.7	25.6	14.7	43.2	238.7	70.5	32.3	18.6	3.7	54.6	1.0	0.4	126.5	

1/ For human consumption only.

THE INTERNATIONAL SUGAR AGREEMENT: PERFORMANCE AND PROSPECTS

OUTLOOK '82

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For Release:



The decisions which the International Sugar Council will take in London in the next few days will have a profound effect on the character and future course of the International Sugar Agreement. The Council will decide whether to extend the life of the current Agreement for a year or two, or to negotiate next year a new five-year Agreement. Basically the question is whether a somewhat anemic, possibly permanently crippled bird-in-the-hand is preferable to a potentially chirping and singing bird-in-the-bush which could very well prove untrappable.

Before discussing the problems and prospects of the current Agreement, two background observations might be useful. It seems to me, first, that the general orientation towards international commodity agreements has changed during the last few years in most western countries, and even in some low-income developing countries. Fashions may be as fickle in the realm of ideas as in more mundane matters. From about 1950 to 1975 anyone who dared to question the universal applicability, usefulness and benefits of international commodity agreements was not only reactionary, fascist, capitalist, imperialist running dog, but a contemptible ignoramus who has missed the thousands of pages of UNCTAD polemics, doctrine and dogma. That commodity agreements were useful, even indispensable, almost became during the first decade of the new era of UNCTAD the touchstone of moral rectitude and goodwill towards the low-income countries which depend on exports of agricultural and other bulk commodities. The much debated question was whether the agreements should be used merely to prevent excessive price fluctuations around the trend or should be a vehicle for transmitting wealth from the rich industrialized countries, meaning primarily the U.S., to the low-income tropical countries in Latin America and Africa. Not all U.S. delegations to international conferences were prepared to go along with this high fashion and they often suffered the fate of finding few friends and even fewer allies.

During the last few years subtle changes towards a more pragmatic approach began to be perceptible in the citadels of the ICAs such as Paris and Brussels, and perhaps even Rome though hardly yet in Geneva. Careful observers began to suspect that the inability to negotiate more than a handful of ICAs and the frequent failures of those which had been negotiated may hide something of fundamental importance which would be folly to overlook. Especially vigorous has been the skepticism with regard to the Common Commodity Fund that was to be the crowning glory of the ICA edifice. The record shows how difficult it is to prevent the price of a commodity to push its way through artificial, politically agreed boundaries, even when those are set in relation to the practical market price and do not attempt to be vehicles for development aid. It is now perceived even in many developing countries, particularly those of more advanced economic structures and with middle levels of income, that what is needed is objective analysis of the record of

ICAs and to apply the experience in future international commodity discussions. If sheep-like repetition of dogmatic faith in ISA will no longer do, it would be almost as mischievous to dismiss the possibility of real problems or that international society can mitigate them. There are highly useful lessons to be learned from the rich body of post-war commodity experience.

The second point is that a better case can be made for an international agreement on sugar than for many other commodities. The economic structure of sugar differs in important ways from that of other agricultural commodities important in international trade. There is the almost universal practice of protection and subsidization - a problem that was recognized almost a century ago and led to the 1902 Brussels Convention; there is the fact that the so-called world free market is a residual market, to mention only two factors. At the time of the 1953 Agreement world production was around 41 million tons, exports to relatively stable special or preferential markets amounted to 7 million tons and to the free market only 5.5 million. As a result changes in exportable supplies relative to world production had disproportionate price effects on the free market - comparable to the difference in effect between an explosion in a tightly confined space and in the open air. But note that the world free market has been changing: it is no longer as small a proportion of world production and trade as it was 15-20 years ago. The largest and most important single change took place in 1974 when the U.S. did not extend the legislation which made it part of the special preferential market. In 1978-80 world production was 87.6 million tons; exports to preferential markets 5.3 million, and to the free market 18.4 million tons (Chart 1). But I doubt whether the trend will continue as vigorously in the future.

How have past sugar agreements performed their primary function of preventing excessive price fluctuations by keeping the world market price within the range (maximum and minimum) set out in the Agreement? Chart 2 shows how difficult it is to have good performance even when the need for the agreement is generally acknowledged and implementation relatively high: i.e., even when there is no blackmarketing and calculated cheating on a substantial scale, as there has been in some agreements. During the first Agreement of 1954-58, prices stayed at the bottom of the range during the first two years, shot through the top in the fourth year, and were in the lower quarter during two years. Less successful was the second Agreement, 1959-63. The annual average of the world price was below the floor in four years - and 100% above the ceiling in the fifth year. Nor was the record of the third Agreement (1969-73) much better: the price was below the floor in the first year, in the Agreement range during the next two years, and 70% above the ceiling (average) during the last period.

Nevertheless I think that without the Agreements the market's performance at the lows would have been worse for exporters. During the first years of the first Agreement, at least, the chances are that the price would have gone lower, if only because the free market was then truly a residual dumping market. But I think that the subsequent Agreements also helped, at least to some degree, during most of the low price periods.

Has the current Agreement been more successful? It has a number of desirable novel features, largely due to U.S. insistence, which have given it above average potentialities for success. Indeed, I would go so far as to say that these features give the Agreement a character of its own, both from the standpoint of world economic development and

justice. I refer in particular to the novel provisions for adjusting export quotas in light of performance so that efficient producers and the countries which find sugar production economically advantageous have the chance to expand production. These provisions counteract to a substantial degree the fundamental fault of export quota schemes, which is that they tend to freeze the status quo.

Another important new feature is the provisions which require exporters to establish a large special reserve stock to be available for release when the price rises to the top third of the range. In theory protection of the floor should be very much easier than of the price ceiling; and the 1977 Agreement was the first serious effort to give protection to importers. To help exporters to carry the much larger stock requirements than of any previous commodity agreement - 2.5 million tons, to be precise, which - and this is the important figure - comes to about 17% of export quotas - the U.S. delegation took the lead in developing a scheme for a fund to defray the costs of carrying the stock. How much of the costs would in fact be borne by importers was scrupulously left to the ad hoc decision of the market; but even so, as the leader of the U.S. delegation, the redoubtable Mr. Katz has said, this marked "a significant change in" U.S. policy - and, let me add, in the policy of other importers, some of whom were far from happy with Washington's fancy ideas. But the U.S. delegation was less active with regard to the allocation of basic export quotas - unfortunately so. I was not a member of the U.S. delegation, but I constantly bewailed this attitude in conversations with my USDA friends. After all, as an ex-USDA employee I'm entitled at least to criticize to members of the glorious fraternity.

We are approaching the end of the Agreement's fourth year, and one must admit that performance has hardly lived up to promise. During the first two years the ISA daily price was on the average 20% below the bottom of the agreed range of 11-21 cents. Then, during the last part of 1979 supply prospects changed and the price rose. The Council moved into high action and proclaimed stock releases which theoretically should have halted the advance in its tracks. Unfortunately the market was not convinced that over 2 million tons of uncommitted special stocks were in place, possibly as exporting countries did not seem to be in a special hurry to sell. The price retreat was short-lived. The ISA price rose to over 40 cents a pound and the 1980 average was 28.7 cents. Protection of the price range was not made easier by the Council's decisions to raise the range by two cents to 13-23 cents. Before the year ended the price was again on a descending path, mainly because of a more realistic perception of the production prospects around the corner. By June 1981 the price was below 15 cents; it fluctuated during the next three months; the Executive Committee met frequently to manipulate "global quota" and quota figures; but in September the price went down to about 11 cents, 15% below the new minimum. The world price rose above the minimum during the last part of September - however in no way because of ISC action.

That things would not be easy was known even before the negotiating conference ended. I remember well a walk from the UN Palais with Bob McConnell and Tom Little of the U.S. delegation who asked me whether I thought the quotas could work. After due statesman-like hemming and hawing I ventured the sage opinion that they could succeed, given a bit of luck. Alas, we have not had luck with production developments and the quotas have not succeeded in preventing the price from falling below the minimum. Nor have the much touted stock provisions prevented it from going through the ceiling.

Of course it is possible that the price fluctuations would have been even greater if the Agreement had not been in place. In a speech at the International Sweetener Colloquium held last February in Phoenix, Mr. Katz said:

"While I cannot prove the proposition, I suspect that in the absence of the ISA the price of sugar would have fallen well below seven cents per pound in 1977-78 and the subsequent rise in prices would have peaked at much higher levels. Viewed in this light I would conclude that the International Sugar Agreement of 1977 did not perform all that badly."

But many market people in London and other important international trade centers do not share this view. They point out that in 1977 prices were pushed down by policies of exporting countries to get rid of stocks before quotas came into effect, which some at least would otherwise have been less ready to dump on a sick market. Once the Agreement came into effect retaining quota entitlements became the paramount consideration which could be achieved only by making full use of the quotas. It is possible that the hope which the Agreement engendered among producers may have forestalled moves to cut production. Also, it is said, the Council was hesitant and slow with quota increases when the first signs of a possible shortage appeared in the market. As to the top of the range, these critics argue that as the reported mountain of 2 million tons of stocks did not avalanche on the market impetus was given to speculative fever which might not have started if, in the absence of an Agreement, stocks had not been held back.

To play around with "what might have been" may be interesting and sometimes instructive; what concerns us is the fact that the price stayed within the Agreement range for only an insignificant fraction of the last four years. Why? I have time only for a summary enumeration of the obvious. (1) The aggregates of export quotas was too high, mainly because of the voracious appetite of the three biggest exporters. Some of the little ones were just as hungry but they lacked the power to take what they wanted. (2) Failure to persuade the EEC to join, aggravated by superb harvests each year. (3) The limitations on quota reductions to a maximum of 15% of BETs (17% under special circumstances). (4) A rule which makes ineffective quota limitations when re-instituted (in response to a fall in price) after the first few months of the year. (5) The principle for adjusting BETs in the last two years in the light of performance has resulted, ironically, in an unprecedented inflation of quotas. This had done as much as anything to make the system unworkable this year - and if unchanged, will make better performance in the future highly problematic. (6) The stock provisions were not as watertight as the kindly, honorable and trusting people who drafted the rules thought they would be. Some countries had every ton which they declared: but the effective special availabilities for the free market was far less than the theoretical 2 million-and-some tons.

What, then, of the future? The immediate question which delegations will have to answer in London is whether this good but imperfect Agreement is good enough to continue with for another two years, especially if the costs, dangers and pitfalls of new negotiation is borne in mind. The question is particularly difficult for the U.S., as policy on ICAs is under examination. I think that with "average" world weather conditions and U.S. production unchanged, world supply/demand prospects are likely to be less turbulent in 1983 and 1984 than during the last two years. Under these conditions, I think the chances are good that the annual average of the world price will be in the Agreement range, which would enable the Agreement to claim success. However if

weather conditions in the major producing areas are abnormal, the Agreement would be hard pressed to hold the line unless two or three provisions are modified, or the EEC is persuaded to join. Whether a way will be found to make these modifications - more than cosmetic but less than structural - I do not know. Parenthetically, a severe decline in U.S. production if there is no price support legislation would also have significant effects.

Under any circumstances, it is to be hoped that the period of grace will be utilized by the Administration and the Congress to start an objective, careful review of the operation of post-war international sugar agreements and other commodity agreements, as well as of the inter-governmental commodity study groups in FAO and UNCTAD. What conclusions and lessons can be learned from these experiences which cover varied circumstances and problems over a quarter of a century or more? The U.S. should not be the eternal "No"-sayer; and its record of international aid entitles it to a better role than as a perpetual Scrouge. If ICAs can be made to work to the long term benefit, in the words of the Havana Charter, "of both producers and consumers", there is no reason for not using this technique for attacking problems of commodities which are of great economic importance to exporting countries. Fifteen years ago the world - and particularly the developing world - would not have listened to objective analysis of cold facts; ICAs were a panacea buttressed by holy faith. Most low income countries which export primary commodities regard commodity agreements as a useful safety net; certainly the sugar exporters do, including such high income countries as Australia and South Africa; and perhaps they can be, on a case to case basis. The verdict will not be in until we get objective performance studies, not polemics.

Chart I.--World Sugar Production, Net Exports,
and Free Market Exports, Average
1955-57, 1968-70, and 1978-80
Million metric tons, raw value

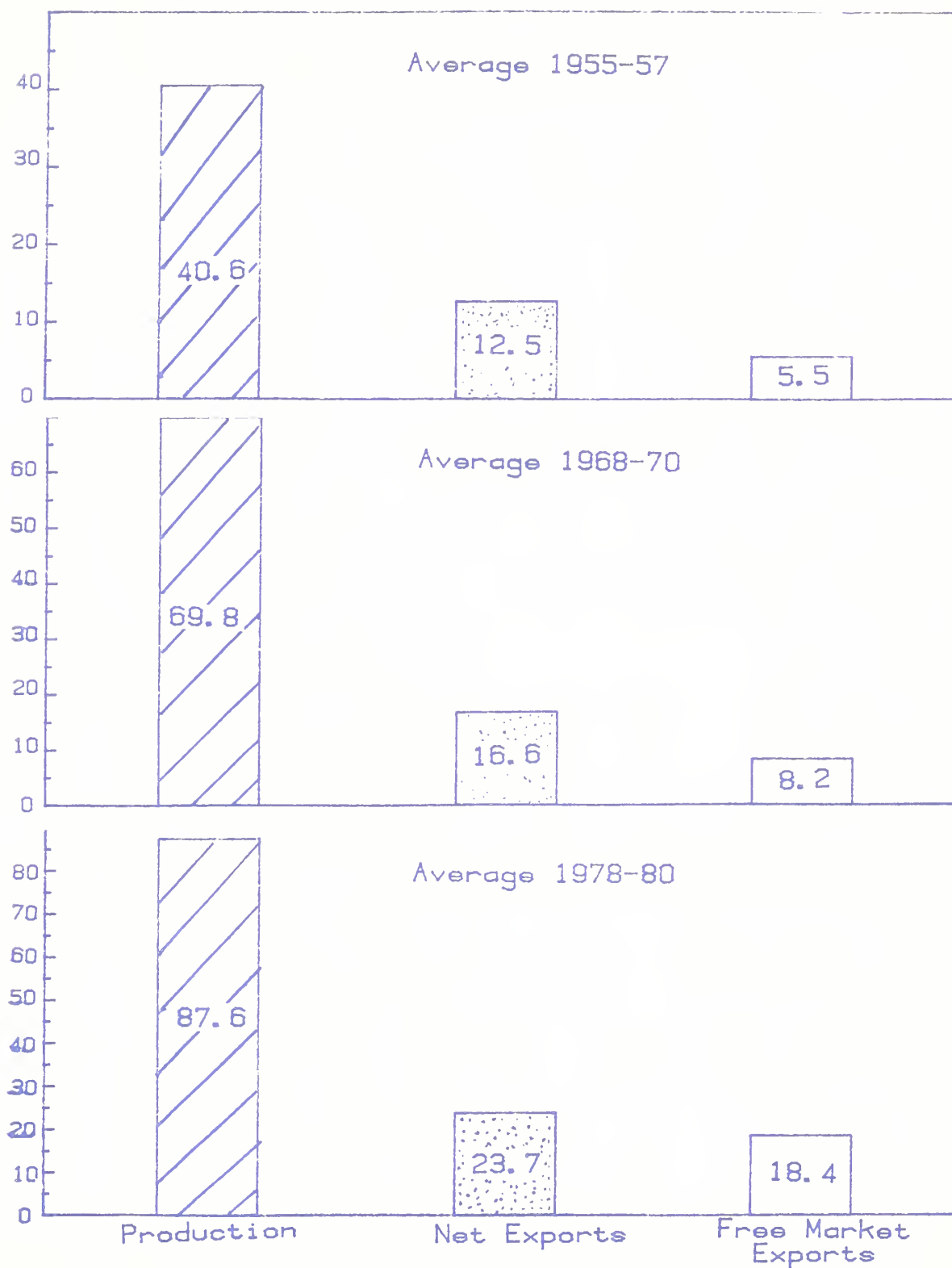


Table 1.--World Price for Raw Sugar and International Sugar Agreement Price Ranges, 1952-81

Calendar: Cents per		Calendar: Cents per	
year	: pound	year	: pound
1952	4.47	1964	5.72
53	3.14	65	2.03
54	3.26	66	1.76
55	3.24	67	1.87
56	3.47	68	1.90
57	5.16	69	3.20
58	3.50	70	3.68
59	2.97	71	4.50
60	3.14	72	7.27
61	2.70	73	9.45
62	2.78	74	29.66
63	8.29	75	20.37
		76	11.51
		77	8.10
		78	7.81
		79	9.65
		80	28.69
		81	20.5 <u>1/</u>
			Since Nov. '80 13.00-25.00

Note: Prices for 1952-60 are New York world contract No. 4, f.a.s. Cuba; and for 1961-81, International Sugar Council daily price, f.o.b. and stowed Caribbean ports.

1/ First 6 months.

Chart II. --World Price for Raw Sugar and International
Sugar Agreement Price Ranges, 1952-81

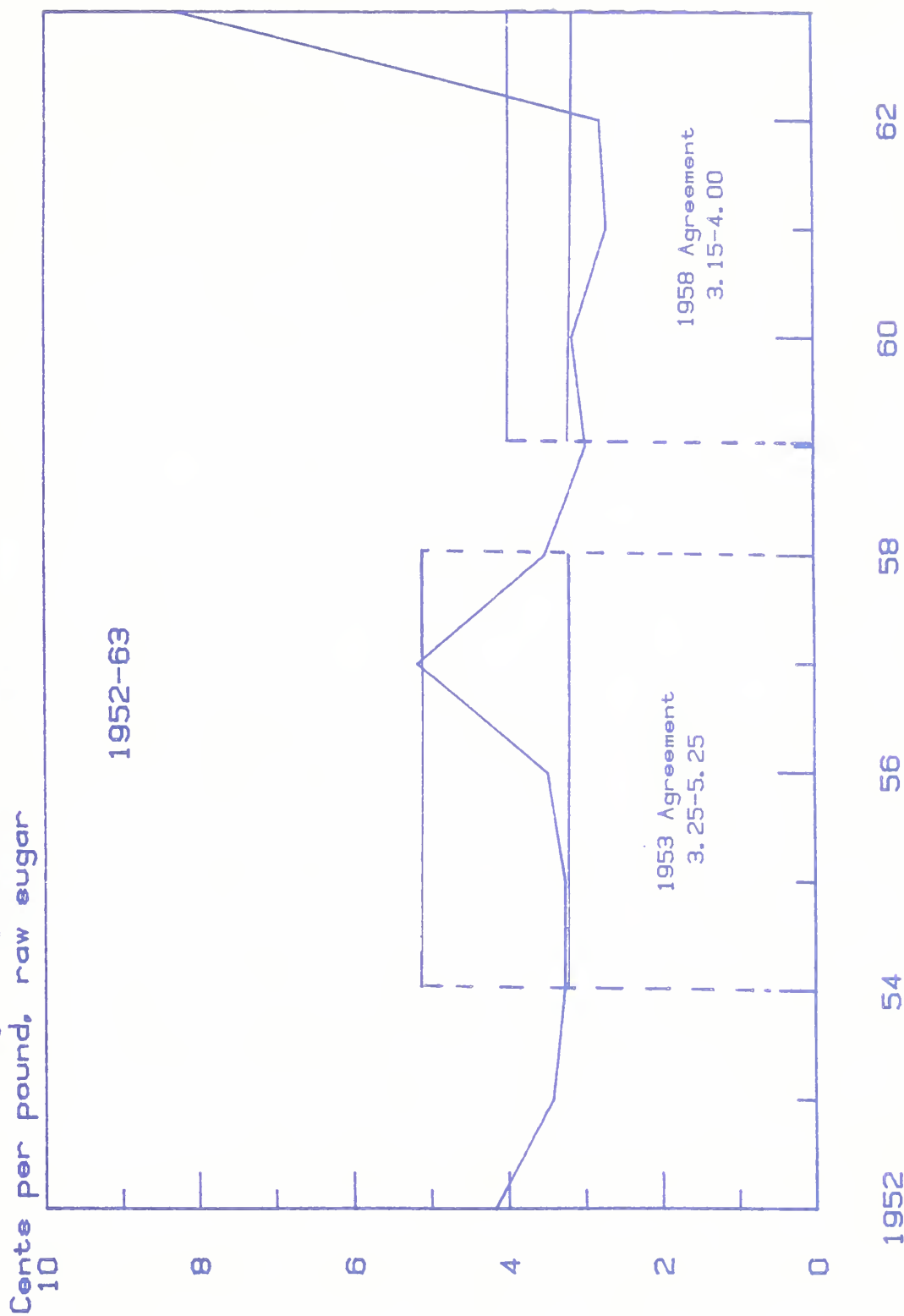
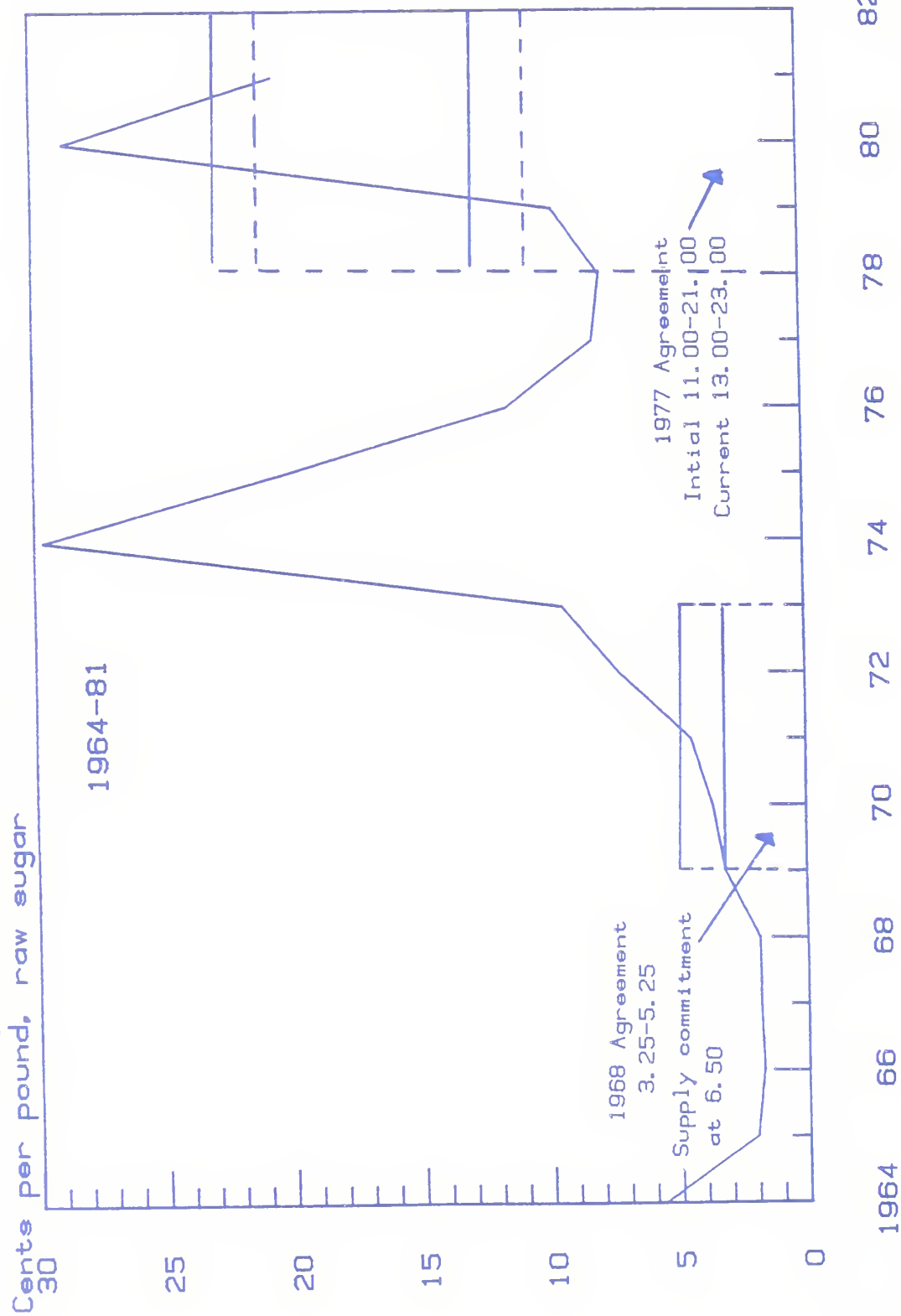


Chart II. --World Price for Raw Sugar and International
Sugar Agreement Price Ranges, 1952-81



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1982 Agricultural Outlook Conference, Session #14
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The number of consumer and business bankruptcies in the U.S. has soared in recent years, generating considerable concern among creditors, legislators and regulators responsible for the laws governing the bankruptcy process. There were about 410,000 bankruptcies in 1980, more than double the 1970 level, and 70% higher than the peak of 231,000 for the decade of the 70s reached in 1975. The number of business failures has also surged in recent years, jumping from 7,500 in 1979 to 11,742 in 1980. Through October of 1981, nearly 14,000 business bankruptcies have been recorded (Table 1). Of the millions of firms in the U.S., most are unincorporated, and the link between business and personal bankruptcy is somewhat difficult to discern. In recent years, many "small businessmen" have reported taking out consumer loans to provide capital for their businesses, since these loans were available at lower interest rates than business loans due to statutory usury ceilings on consumer lending.

The cause of the rapid run-up in bankruptcies is not easily determined. The economic climate in the U.S. for the past several years has not been strong. Inflation, energy costs, rising taxes and weak employment growth in recent years have all taken their toll on our economic agents, reducing their "cash flow" and inducing increased reliance on debt. Business activity has become more volatile, making survival more difficult for increasingly leveraged firms and consumers. However, these factors seem insufficient in themselves to explain the dramatic increase in bankruptcies.

Many observers feel that the new bankruptcy law is responsible for the surge in defaults. The law, which became effective in October, 1979, made it substantially easier to declare bankruptcy and in practice has reduced the economic cost of bankruptcy to the debtor. Having reduced the "price"

of this good, it should not be surprising that consumers would demand more of it. Consumers will declare bankruptcy when the economic value of bankruptcy exceeds the benefit associated with maintaining payments on existing liabilities. Thus, increasing the amount of net worth protected from creditors in bankruptcy proceedings or effectively reducing the percentage of outstanding obligations that must in fact be repaid to satisfy obligations will increase the value of bankruptcy to the debtor.

Rather than discuss the need for a bankruptcy safeguard for debtors, it may be useful to examine some of the effects of establishing the bankruptcy process, or easing the cost to the debtor of existing bankruptcy proceedings. First, consider the issue of "moral hazard". Just as consumers are more willing to drive faster with better brakes and are more careless about preventing theft because losses are insured, so consumers may be less careful about their use of credit when the protection of bankruptcy is available. One can take more risk if the consequences of this behavior can be escaped when the potential damage becomes substantial. The more protection afforded the consumer through the law, the more likely consumers are to take on larger amounts of debt relative to their assets or their capacity to repay.

Creditors of course will adjust their lending standards to any given bankruptcy law, taking economically appropriate care (risks) to limit exposure to debtor default. Higher downpayments and the taking of security interest are two ways firms can mitigate the impact of potential bankruptcies. Credit standards can also be adjusted to limit exposure. However, once such adjustments are made and credit is extended, changes in the law that reduce the cost of bankruptcy to debtors can leave creditors in an overly-exposed condition.

Another concern can be best identified by viewing bad debt losses as a transfer payment program. Clearly, debtors who default on their obligations receive a benefit equal to the defaulted sum owed (and the value of whatever the borrowed funds were used for). More interesting is the question of who pays for this transfer. Unless the interest rates on loans have been properly established, it is the saver. Consumers deposit their savings in financial institutions which reinvest the funds, earning higher yields and diversifying the risk to the saver. For a given level of interest rates, higher bad debt losses mean lower returns to savers. Thus, transfers resulting from the bankruptcy process are funded by a tax on savings.

This "tax" is frequently imposed when "the rules of the game" change after lenders and debtors have reached agreement on the terms of a loan. Thus, as of October, 1979, all existing lending agreements became obsolete, since the interest rates charged in the agreements less than fully reflected the default risk present in the new environment, and lenders (savers) earned too low a return.

If interest rates charged for loans fully reflected the risk associated with the loan, then the transfer of funds to defaulting debtors is funded differently. The increased ease of declaring bankruptcy raises the risk for all loans made to consumers, and thus the cost of lending is increased. Customers of different risk classes are charged different rates to cover the associated lending risk. Higher risk consumers will pay higher risk premiums for their loans, and thus pay higher interest rates. These "risk premiums" are like insurance premiums paid by the borrower to protect the lender from capital loss due to default (it should be remembered that the lender is simply an agent for the saver). If loans to high risk consumers have default rates of 5 failures per 100 loans compared to lower risk loans that default at a rate of 1 per 100 loans, then clearly the lender must charge the high risk borrowers a higher premium to cover the five defaults. All 100 risky borrowers pay this premium in order to induce the lender to make the loans. These "premiums" will be increased if the new bankruptcy law raises the loss rate on each given class of risk. "Good" borrowers will have to pay even higher risk premiums to get credit. Those higher premiums will be used to cover increased bankruptcy losses. Consequently, even if the saver can be protected from increased bankruptcy loss, these losses will still be subsidized by other consumers -- in this case, those of the same risk class that faithfully repay their obligations.

Thus, increased bankruptcy protection may help consumers who encounter difficulties in repaying their credit obligations. And, in many instances, such defaults will be due to socially acceptable causes (e.g. death, illness, disability and long-term job loss). It is interesting to note that the incidence of credit losses may even exhibit desirable redistributive properties. A 1975 study of credit card losses showed that nearly 60% of the uncollected debts came from the lowest 25% of the income distribution of credit card users (Table 2). The top 30% of the card user income distribution benefited from only 5% of the losses.

Although a surge in bankruptcy filing was not surprising immediately after the new law was passed, the continued growth in the number of bankruptcies since 1980 has been disturbing. Even though economic growth has not been dramatic, it has not been substantially adverse either. Furthermore, the financial aggregates have indicated continued improvement in the consumer's financial position, not a deterioration as the bankruptcy figures might indicate. The proportion of after-tax income devoted to debt servicing has declined steadily since the new bankruptcy law was enacted (Table 3). The ratio of savings deposits to short term consumer debt has reached post-WWII high levels, while the ratios of credit extensions and instalment debt outstanding to disposable income have declined.

Perhaps not all consumers have participated in this re-liquidation process. If some consumers have experienced economic adversity for a substantial period of time (e.g. auto workers in the mid-west), they may be contributing to rising bankruptcy rates. Such structural disparities can result in misleading interpretations of the aggregate debt quality measures. But, at least through 1977, all income groups seemed to have participated in the trend toward improved portfolio liquidity (Table 4). The average ratio of repayments-to-income fell from 19.6% in 1967 to 18.8% in 1977, and fell in every income group save the lowest 20% (although only 37% of the lowest income consumers had mortgage and/or instalment debt).

Thus, there was little evidence that consumers were "in trouble" or that the 1980 credit controls were really needed. Instalment debt outstanding did increase by about \$80 billion in the 1978-79 period, but was slowing significantly by the end of 1979. Since 1979, instalment debt owed has risen from \$311 billion to about \$320 billion, or about 3% in nearly two years. The 1978-79 surge in debt use, although large, was not out of line with inflation during the period and, in retrospect, still seems an unlikely candidate as the main cause of the surge in bankruptcy that followed. This is especially true in light of the fact that most of the increase in debt use seemed to be among consumers in the top 40% of the income distribution.

It appears, then, that the substantial benefits to the debtor in the new bankruptcy law has encouraged consumers to declare bankruptcy -- a rational economic response to increased benefits and reduced social stigma. The cost of the rise in bankruptcies will come from earnings that might otherwise have accrued to savers and investors and from consumers that borrow money at elevated interest rates to cover higher bankruptcy losses. A recent Credit Research Center study of bankruptcies

indicated that 39% of the bankrupts could have repaid 100% of their obligations from available income in 5 years (Table 5). An additional 17% could have repaid part of their non-mortgage obligations. Thus, 40% of the debtors studies received wealth transfers from savers and non-defaulting borrowers to cover debts that they could have repaid full or in part within 5 years.

The use of bankruptcy will continue at relatively high rates in the near future. A weak economy, declining employment and record high interest rates will force some consumers into bankruptcy as is the case in any business cycle. Many more consumers have debt today than in the past, and overall, leverage in the consumer portfolio has risen (accompanied by longer maturities), increasing consumer exposure to cyclical fluctuations in income. But these factors aside, the law has made bankruptcy a more attractive (less costly) alternative to debt repayment. Lawyer advertising has provided new information to consumers and encouraged the use of bankruptcy. Thus, the number of bankruptcies can be expected to remain relatively high, even in recovery periods, until the current law is tightened.

TABLE 1

BANKRUPTCIES IN THE UNITED STATES

	<u>Personal</u> ^a	<u>Business</u> ^b
1970	188,300	10,700
1971	171,800	10,300
1972	139,100	9,600
1973	157,700	9,300
1974	193,500	9,900
1975	231,000	11,400
1976	193,700	9,600
1977	176,600	7,900
1978	179,200	6,600
1979	228,500	7,600
1980	409,800	11,700
1981	457,100 ^c	16,400 ^d

^aBankruptcy Division, Administrative Office of the U.S. Courts

^bDun and Bradstreet, selected issues, Wall Street Journal

^cFirst two quarters, annualized

^dThrough October, 1981, annualized

TABLE 2

"TRANSFER PAYMENTS" FROM BAD DEBTS
Retail Credit Cards, 1975

<u>Card User Income</u>	<u>Percent of Card Users</u>	<u>Share of Bad Debts</u>
Under \$7,500	11%	35%
\$7,500-10,000	14	24
\$10,001-15,000	25	23
\$15,001-20,000	21	13
\$20,001 or more	29	5
	<u>100%</u>	<u>100%</u>

Source: W.C. Dunkelberg, "The Transfer Implications of Consumer Credit Regulation," Kenneth Boulding and Thomas Wilson, eds., in Redistribution Through the Financial System, Praeger, New York, 1979.

TABLE 3

<u>Date</u>	<u>Ratio of Debt Repayments to Disposable Income</u>		
	<u>Mortgage</u>	<u>Instalment</u>	<u>Total</u>
1980:1	5.1%	17.1%	22.2%
2	5.1	16.6	21.7
3	5.1	16.7	21.8
4	5.0	16.3	21.3
1981:1	5.1	16.3	21.4
2	5.0	16.2	21.2

Source: Board of Governors, Federal Reserve Board

TABLE 4

<u>Approximate Income Quintile</u>	<u>Percent With Debt</u>		<u>Repayment as a Percent of Total Income</u>	
	<u>1976</u>	<u>1977</u>	<u>1976</u>	<u>1977</u>
Lowest	30%	37%	36%	39%
2nd	49	59	21	20
3rd	68	75	18	18
4th	76	83	17	16
Highest	73	81	15	12
All Families	59%	67%	20%	19%

William Dunkelberg, et al, "Consumer Credit in the 1970s",
Purdue University, 1981.

TABLE 5

PERCENT OF NON-MORTGAGE CHAPTER 7 DEBTS
DISCHARGED THAT COULD BE REPAID IN 60 MONTHS

<u>Repayment Potential</u>	<u>Number of Cases</u>	<u>Percent</u>
100%	242	23%
75% to 99.9%	38	4
50% to 74.9%	46	4
25% to 49.9%	57	5
0% to 25.9%	46	4
None	641	60
Total	1,070	100%

Source: Credit Research Center, Purdue University.

Dale P. Riordan
Federal National Mortgage Association

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Washington, D. C.

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The term revolutionary is one that tends to be over-used. However, when applied to the residential shelter and financing industries, it is most appropriate. The changes made in the last several years to the basic mortgage instrument, for instance, have been nothing short of revolutionary. Those changes represent the first major alteration of the fixed-rate, long-term, fully-amortizing loan we have all come to know and love. Similarly, the close connection that has developed between the capital and mortgage markets is another sea change.

My purpose this afternoon is to discuss briefly some of the changes occurring in mortgage instruments and the implications of those changes for the housing market and the homebuying public. First, however, the current conditions in the housing and capital markets are discussed as background.

The Current Housing Situation

Without a doubt, we are now in a housing depression. New housing activity seems to be headed for its lowest levels since World War II. Our estimate is that no remaining month in 1981 will see starts at a level of 1.0 million units or higher (at seasonally adjusted annual rates).

Housing starts were at seasonally adjusted annual rates of 934,000 and 918,000 units in August and September, respectively. Construction of single family units, which fell 16 percent from the July level, accounted for the entire drop in August's 934,000 unit figure, while the September level reflected stability in all categories except 2-4 family units, which fell by 20 percent.

Total housing permits issued also experienced a modest decline of 2.4 percent in September to a level of 844,000 units, an extremely low number. Single-family permits continued to fall from 494,000 in August to 448,000 in September, a decline of nearly 10 percent. The only "bright" spot in the permits levels was multifamily construction, which rose by 10 percent to a seasonally adjusted annual rate of 311,000 units. Because

permit levels generally lead starts, this decline in permits means that we can expect continued depressed levels of construction of single-family homes for the near future.

Table I shows the ratio of housing starts to building permits from 1963 through the first half of 1981. As can be seen, the starts to permits ratio is always near 100 percent, indicating that permits do turn into starts, albeit with a lag. The lags explain why the ratio is not exactly 100.

Despite the depressed construction activity for single family housing, the median sales price of new single family houses jumped \$3,900 in August to \$73,900. Compared with its year-ago level, August's median price was 17 percent higher. This continued rise in new house prices may be attributable to two factors. Because of high rates, an increasing number of builders are now offering "buy-down" plans to qualify buyers for a mortgage. While this is a price concession in and of itself, it is not reflected in the published figures. Thus, house prices are being kept arbitrarily high in return for discounted mortgage rates during the initial years of mortgage financing. Another factor causing housing prices to be higher is that with current interest rate levels, fewer medium-priced homes are being sold than high-priced homes, because purchasers of the latter may be less affected by high rates. Therefore, the higher level of house prices may be due in part to a statistical anomaly, i.e., a greater proportion of higher-priced houses being included in the survey data.

Recent developments in delinquency rates also bear close scrutiny. Historically, the delinquency rate has been positively correlated (with a lag) to the unemployment rate. As general economic conditions worsen, more people lose their jobs and the interruption in income flows causes mortgagors to fall behind on their mortgage payments. Conversely, as the economy improves, the delinquency rate falls. However, since it is expected that the unemployment rate will continue to edge upward in the forthcoming months, we can expect that delinquency rates will also be increasing. The delinquency rate is at a 1.2% level currently. Its peak was 1.65% during the 1974 - 1975 economic downturn. As recently as early 1979, it was at a 0.85% level.

Interest Rates

During late August and September, we saw a definite flattening in the yield curve. The Treasury yield curve, for instance, became progressively less negative with short rates dropping and long rates rising.

A continued move to a positive yield curve is a necessary

condition for a normally functioning capital market. However, the achievement of an upward sloping yield curve has been frustrated many times in the past.

FNMA's expected interest rate forecast calls for a continued decline in short rates through 1982, but a very slow decline in long rates. Three-month Treasury bill rates, for instance, could fall to the 12 percent level (bond-equivalent basis) in the fourth quarter, but it is unlikely that mortgage rates will fall below 15 percent by the end of next year. The major reasons for the slow decline in long rates are continued high real interest rates, in the range of 5 - 7 percent, only slight softening of inflationary expectations, and a significant amount of corporate demand for intermediate and longer term credit as long rates decline slightly (which will keep long rates from falling too far). How do these high and volatile rates affect lenders and their decisions to extend additional credit? Many lenders today have accepted the fact that they cannot predict interest rates over more than a very short term period. In addition, there is a significant amount of disagreement about the likely course of the economy as well as the direction of monetary policy. Given all these uncertainties, lenders are less willing to extend credit, especially fixed-rate, long-term credit.

What Will it Take for Housing to Recover?

We believe that housing starts will recover from their lackluster 1981 performance, estimated to be between 1.0 to 1.1 million units, to a level of 1.4 million units in 1982. While this is far from normal, it will represent genuine recovery and will be the highest level, if achieved, since 1979.

However, we would qualify that estimate with the following:

- the economy does not enter into a prolonged recession/depression in 1982 but shows at least modest real growth.
- short and intermediate rates decline moderately during the next 15 months; as indicated, we are pessimistic that long rates will fall very quickly
- continued progress is made in the use and acceptance of adjustable rate mortgages (see discussion below)
- further progress is made toward a more competitive and more viable thrift industry; we do not believe that housing can make a genuine recovery until the institutions that finance it are viable and can offer competitive rates

I would like to elaborate on this last point. Traditional mortgage lending institutions -- mortgage bankers, thrifts, and commercial banks -- were prevented by government regulation from being able to survive and prosper in an inflationary and volatile-interest rate environment. On the asset side, prohibitions against ARMs and in some cases state usury ceilings in the 1970's virtually forced traditional mortgage lenders to acquire fixed rate mortgages -- precisely the wrong kind of asset for any inflationary environment.

At the same time, limitations on deposit rates assured that depository institutions would have a difficult time acquiring funds from small savers. Even today, these limitations are still in effect. And, mortgage lending in some states has been made less attractive by prohibitions on due-on-sale clauses.

Housing will not fully recover until all institutions that finance housing are financially healthy, can compete at market rates for savings and can invest in a mortgage instrument that is attractive in an inflationary environment.

Development of Adjustable Rate Mortgages

Adjustable rate mortgages have developed over the last several years because the fixed-rate, long-term mortgage is no longer an adequate instrument for housing finance. As indicated above, given the uncertainty in interest rates and monetary policy, lenders are unwilling to extend fixed-rate, long-term credit. Traditional mortgage lenders like FNMA and the thrifts have financed the acquisition of their long-term mortgages with short-term deposits. While this meant we were exposed to a great deal of risk if short term rates should suddenly have risen rapidly, the relative stability of the yield curve in the 1960's and early 1970's (negative yield curves were rare and temporary) meant that borrowing short and lending long was a profitable business. And, it may have contributed to somewhat lower mortgage rates.

All that has changed, of course, in the last several years, and we have had a negative yield curve for some time, as well as a general increase in the level of rates. Further, interest rates have become extremely volatile. In such a world, long-term lending becomes very dangerous for the lender, although it can be very lucrative for the borrower. Hence, mortgages whose interest rates fluctuated with short and medium term money market rates were developed -- adjustable rate mortgages (ARMs).

ARMs, or some version of them, were introduced as early as 1975, but they never were that prominent until this past year. During that time, the Comptroller of the Currency and

the Federal Home Loan Bank Board, the regulators for national banks and thrifts respectively, published regulations that significantly liberalized the authority of these institutions to make ARMs. Previously, they could do so only under limited circumstances.

In July of this year, FNMA began offering an ARM purchase program -- actually eight different programs -- to accommodate the mortgage market. Activity to date has been slow primarily because of the level of rates. We expect, though, that as short and medium-term rates continue to decline, ARMs will become more popular. As I indicated, we believe that an active acceptance of ARMs may be necessary before we see a genuine recovery in the housing market.

As indicated, ARMs are typically indexed to some measure of interest rates. Some of these measures are short-term, while others are long. FNMA's eight ARM purchase options use a variety of indices -- 6 month Treasury bills; one, three and five year Treasury notes; and, the Federal Home Loan Bank Board's index of closed mortgage loans. The reason for indexing is so that as the cost of funds in the market rises, the mortgages supported by those funds can shift by a similar amount. Hence, if a lender borrows three-year deposits or debt to fund a three-year ARM, if interest rates have risen during the three year period, causing the cost of funds to increase, the mortgage rate will also increase. Conversely, if interest rates fall, the mortgage rate will decline. The only exception to this in the indices named above is the FHLBB index, which is not a cost-of-funds index. Since it does not move up and down with interest rates, it is not as desirable an index.

Some ARMs incorporate interest rate and/or payment caps. For instance, if a mortgage instrument allowed a 2% maximum change in any year, and if interest rates changed more than that, the mortgage rate could only change by 2% per year. Payment caps work in the same way. While such instruments are often more desirable for borrowers, they are not preferred by lenders because they may not fully reflect changes in market rates. Therefore, they may carry higher initial mortgage rates to offset this risk.

Negative amortization is becoming a more common feature in ARMs. Negative amortization simply means that the monthly payment does not cover the required principal repayment or all of the scheduled interest. Therefore, the loan balance actually grows slightly each month. Negative amortization first became popular with graduated payment mortgages (GPMs), loans where the initial monthly payment was lower than on comparable fixed-rate loans, but where the payment was increased annually for several years. These loans are popular with first-time buyers who want (and may need) the lower monthly payment.

Negative amortization is used in approximately the same way in ARMs. In order to reduce the impact of rising rates on monthly payments, the ARM instrument may incorporate a payment cap, as mentioned above. However, the lender may still receive the same benefit (through negative amortization) as if the payment were unconstrained because the principal grows (cash flow is constrained, however). Hence, negative amortization can bridge the gap between too-large payment increases for borrowers and an adequate rate of return on investment for lenders.

Implication of ARMs for the Housing Market

It is difficult to estimate the ultimate impact of ARMs on the housing market because they are relatively new to mortgage finance. While the percentage of variable-rate loans (a form of ARM) held by some California institutions is high, in most parts of the country, they are not that well known.

A number of things can be said with certainty, however. First, homebuyers will have to make higher monthly payments for housing, payments that are reflective of real interest rates. Because inflation was not anticipated during the 1970's, real interest rates on mortgage credit were actually negative because the rate of inflation exceeded mortgage rates. Second, housing will not occupy the favored political position it did during the 1960's and 1970's, when its production and consumption was fed by subsidized interest rates. Finally, mortgage rates will be tied even more closely to bond market rates, especially with the growth of conventional mortgage-backed securities. While this may mean somewhat higher rates than otherwise, the supply of funds for housing is likely to be enhanced. ARMs will play a growing role in this environment. For many years, mortgage credit has been subsidized by the lender or ultimate investor. Consequently, it suffered through many cycles because of its fixed-rate, long-term nature (potential buyers did not want to lock-in high rates for thirty years). ARMs can deal with both of these problems -- adequate rate of return and cyclicity -- in an efficient way.

Table II

Ratio of Housing Starts to Building Permits in Permit Issuing Places, 1963-1981
(in thousand units)

Year	SINGLE FAMILY			FIVE UNITS OR MORE		
	Starts in Permit Issuing Places	Authorizations in Permit Issuing Places	Starts/Permits Ratio (%)	Starts in Permit Issuing Places	Authorizations in Permit Issuing Places	Starts/Permits ratio (%)
1963	750.1	750.2	100.0	NA	-	-
1964	725.8	720.1	100.8	448.0	464.9	96.4
1965	719.8	709.9	101.4	419.7	445.1	94.3
1966	568.8	563.2	101.0	321.4	347.7	92.4
1967	619.4	650.6	95.2	370.9	417.5	88.8
1968	689.5	694.7	99.3	523.0	574.4	91.1
1969	626.7	625.9	100.1	562.0	612.7	91.7
1970	619.9	646.8	95.8	532.1	616.7	86.3
1971	894.0	906.1	98.7	771.5	885.7	87.1
1972	970.4	1,033.1	93.9	899.9	1,037.2	86.8
1973	855.5	882.1	97.0	782.7	820.5	95.4
1974	646.7	643.8	100.5	372.5	366.2	101.7
1975	673.3	675.5	99.7	197.1	199.8	98.6
1976	888.2	893.6	99.4	278.5	309.5	90.0
1977	1,130.4	1,126.1	100.4	392.1	442.7	88.6
1978	1,104.8	1,182.6	93.4	438.1	487.3	89.9
1979	997.6	981.5	101.6	418.7	444.8	94.1
1980	725.9	710.4	102.2	323.0	365.7	88.3
1981*	702.0	663.3	105.9	346.8	363.7	95.4

*First half of 1981

Source: U.S. Bureau of the Census, Housing Starts, Construction Reports, Series C-20.

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Slow economic growth and constrained consumer budgets are expected to hold down beef price gains through at least mid-1982. However, lower feed costs, moderating interest rates, and much improved forage conditions will help hold down production costs. Beef production has risen 2 to 3 percent in 1981 and a further increase of 3 to 4 percent is expected in 1982. Fed cattle prices will show only modest improvement over the 1981 average. Feeder cattle prices may show slightly more improvement as production costs decline, allowing cattle feeders to bid more for replacement feeder cattle. Cattle feeders will also face stronger competition from stocker operators with good forage supplies.

1981 in Perspective

Slow to negative real economic growth and high interest rates resulted in a year of restrained consumer budgets. In addition, dry weather and high feed costs resulted in sharply higher costs of production and poor returns for live-stock producers. Expectations for higher meat prices in 1981 were thwarted by the emerging conflict of a stimulative fiscal policy and a restrictive monetary policy. The result was a slowing economy, tight consumer budgets, and sharply higher, rather than lower, interest rates.

1982 General Economy

The Federal Reserve Board has indicated that the 1982 target ranges for monetary growth will be one percentage point lower than in 1981. Therefore, money and credit may be even tighter next year. Slow economic growth and high interest rates are expected to result in a constrained demand for a slightly smaller meat supply in the first half of 1982, as occurred in 1981. Some recovery for meat prices is expected in the second half of 1982 with the 10 percent tax cut, effective July 1, stimulating consumer demand. Grain prices are already declining, and interest rates, though remaining high, are expected to moderate from present levels. These factors, combined with an expected slowing inflation rate, will help strengthen the cattleman's financial position through already lower production costs and improved consumer purchasing power beginning in mid-1982.

Production Costs More Favorable

Production costs are much more favorable this fall than they were a year ago. The 1980 drought resulted in sharply higher grain prices, hay prices, and poor grazing prospects through the first half of 1981. The drought resulted in generally poor pasture and range feed conditions a year ago. Early fall rains last year appeared to hold promise for good wheat and small grain grazing

prospects. However, those were the last significant rains in most small grain grazing areas until late spring. Hay prices rose from \$57.40 per ton at the end of the 1979/80 winter feeding season to near \$78 per ton at the end of the 1980/81 grazing season. However, the mild, dry winter held down feeding requirements, preventing what could have been even sharper culling of the cattle inventory. Very favorable moisture conditions this summer have resulted in a rebuilding of hay stocks, good to excellent grazing conditions in most areas, and good fall and winter small grain grazing prospects, particularly in the wheat grazing areas. This year's hay crop was 8 percent above a year ago and only 4 percent below the record 1979 harvest. Accumulated range and pasture grazing, larger hay stocks, and promising fall and winter grazing should provide an adequate cushion in the event of a more severe winter.

Prospects for a record feed grain crop and a rebuilding of feed grain stocks as of October 1 have already contributed to lower feeding costs. As of October 1, the corn crop was forecast at a record 8.08 million bushels. Grain sorghum production is forecast to increase 49 percent from last year's poor crop. While the large feed grain crop will help all livestock producers, the large grain sorghum crop will be especially helpful to the feed deficit High Plains commercial cattle feeder. Farm prices of corn in 1981/82 are expected to average \$2.60 to \$2.90 per bushel compared to \$3.10 in 1980/81. Grain sorghum prices are expected to decline from \$2.91 per bushel last year to \$2.40 to \$2.60 in 1981/82.

Soybean production as of October 1 was forecast to increase 18 percent above last year's crop. Carryover stocks are expected to rise about a third to a record 420 million bushels at the end of 1981/82. As indications of a bumper crop firmed, soybean prices at the farm declined from \$7.42 per bushel in May to \$6.29 in mid-September. Soybean meal prices at Decatur are expected to average \$170 to \$195 per ton this year, compared to a \$218 average in 1980/81.

Herd Expansion Continues

The cattle and calves inventory on July 1 increased 2 percent from a year ago, a slowdown from the 4 percent pace recorded between 1979 and 1980. The number of beef cows that have calved increased 2 percent despite the poor 1980/81 conditions. Heifers saved for possible beef cow replacement increased 7 percent from last year and 8 percent above 1979 levels. The expected 1981 calf crop, as of July 1, is only 1 percent larger than a year earlier, as the extended drought and hot temperatures in the summer of 1980 apparently reduced calving rates. About 46 percent of the replacement heifers on hand January 1, 1981 entered the herd during the first half of the year. This was below the 55 percent entry level of first half 1980, but still well above the 38 and 36 percent recorded in 1978 and 1979, respectively.

Cattle slaughter is expected to increase by about 3 percent in 1981. Cow slaughter is expected to remain slightly above the 13.2 percent of the January 1 cow herd during 1981, the same proportion as in 1980. This proportion has remained well below the 16 to 17 percent required for herd stability, much less for herd liquidation. The cattle herd on January 1, 1982 is expected to increase by 2 to 3 percent to about 118 million head. A 3 to 4 percent increase in cattle slaughter is expected in 1982. Cow slaughter is also expected to increase, but not sufficiently to cause inventory expansion to slow, much less decline, during 1982.

The rate of herd expansion has slowed, but expansion is expected to continue over the next couple of years unless a sharp reversal in forage supplies occurs.

Much land has been shifted from pasture to crop production since the early 1970's. This shift continued in 1981 with an additional 9 million acres planted to the principal crops. Shifts in pasture land to crop production and higher energy costs (fertilizer, herbicides, etc.) will affect the inventory peak of this cattle cycle through the forage resource carrying capacity. However, the beef herd will likely continue to expand. With improved forage supplies and grazing conditions over last year, cattlemen may continue to expand herds to reach more normal pasture and range carrying capacities. In spite of poor returns, most operations, particularly those in the Plains and Western States, continue to cover shortrun cash costs. A majority of all beef cow-calf operators raise their own replacement heifers. This represents an opportunity cost, but not a new investment which must be financed at today's high interest rates. Resource constraints will likely limit the peak cattle inventory to well below the previous 132 million head peak recorded in 1975. There appears little likelihood that the current shifts of land to crop production will be reversed in the next few years. There is even less likelihood that anyone who dispersed their cattle herd during the 1976-79 liquidation will be able or willing to make the large capital investment required at current high interest rates to reestablish a cattle herd. Operations on which the cattle enterprise is an important source of income will again approach full capacity, but those who have dropped the cattle enterprise have little incentive to reenter.

The sharpest declines in beef cow numbers during the liquidation phase of the cycle occurred in the Lake States and Southeast. Beef cow numbers between 1975 and 1979 declined 19 percent for the U.S. but 23 and 31 percent in the Southeast and Lake States. On January 1, 1981, U.S. beef cow numbers were still nearly 15 percent below 1975 levels; the inventory in the Lake States and Southeast was still 22 and 19 percent below 1975 levels. The Pacific and Mountain States showed most rapid rebuilding, with beef cow numbers at 5 and 10 percent below 1975 levels.

World beef production was about unchanged in 1981 from a year ago, and little expansion is expected in 1982. Per capita world beef consumption is expected to continue declining in 1982, as it has since 1977. Beef production in Australia and New Zealand, the two major exporting countries, is expected to decline again in 1982. Export supplies from Central America and Canada may increase modestly.

Feeder Cattle Supplies Adequate

Despite a large nonfed steer and heifer slaughter and only a slight increase in the calf crop, sharply reduced feedlot placements have resulted in a slight increase in the feeder cattle supply outside feedlots on October 1. Net feedlot placements this summer were 11 percent below a year ago, the lowest since the summer of 1974. Nonfed steer and heifer slaughter this summer declined from this spring, but continued near the large levels of a year ago. Nonfed steer and heifer slaughter was nearly 600,000 head above a year ago through September, with all of the increase occurring in the first half of the year when drought and high feed costs were problems. Calf slaughter through September increased 6 percent over a year ago.

There were nearly 2 percent more calves under 500 pounds outside feedlots on October 1. The yearling feeder cattle supply increased 1 percent despite 1.6 percent fewer yearlings in the cattle inventory on July 1. The present feeder cattle supply is 0.9 million head above the year-earlier supply.

Stocker cattle demand is also likely to be stronger this fall as range and pasture growth in most areas is considerably more favorable for over-wintering programs than a year ago. In addition, moisture levels in most small grain winter pasture areas, particularly the High Plains wheat grazing areas, holds good promise for a sustained winter grazing program. Small grain grazing prospects also looked favorable in early November last year. However, rains in September-October which encouraged early small grain pasture growth were not sustained, and an important source of fall and winter grazing failed to materialize.

Continued lower feeder cattle prices and sharply lower grain prices, plus expected improvements in fed cattle prices, are likely to improve feedlot demand for replacement cattle. Cattle placed on feed this fall are likely to require a breakeven fed steer price at Omaha in the mid-\$60's. Some of the placement may be heavier yearling cattle to fill what now appears to be a void in late fall-early winter fed cattle marketings. Many of the heavy, fleshier yearling cattle, on the other hand, are likely to end up as nonfed slaughter.

Consequently, improved overwintering prospects, improved feedlot demand, and continued large nonfed slaughter of fleshier feeder cattle are likely to hold yearling feeder cattle prices near to slightly above fed cattle prices. Yearling feeder steer prices at Kansas City may average near \$70 in 1982, as lower feed costs, in particular, allow some increase in prices. Yearling feeder steer prices may average in the mid- to upper \$60's this fall, before increasing to near \$70 next winter and spring. Prices in the second half of 1982 are still likely to average near the \$70's. Feeder calf prices are likely to average near their traditional \$5 to \$10 premium over yearling prices, beginning in late winter. However, a continued sluggish economy will keep a cautious outlook on profit expectations and, therefore, feeder cattle price gains. Any turnaround in the economy, interest rates, or fed cattle prices would be translated very quickly into feeder cattle prices, as was the case in 1981. Stronger retail beef demand in the second half of 1982 could support somewhat higher feeder cattle prices as cattle feeders' expectations for higher 1983 meat prices improve.

Fed Beef Supplies to Decline this Fall

Cattle on feed October 1 were 9 percent below a year ago, and feedlots continued to clean up the last of the large spring placements through late October. The number of heavy steers on feed on October 1 was 1 percent above a year ago, but the inventory in weight categories from which most fall marketings will come declined 4 to 11 percent. Steers weighing 900 to 1,099 pounds and those weighing 700 to 899 pounds were 7 and 11 percent below a year ago. The 700-pound and heavier heifer weight groups were both 4 percent below a year earlier. Cattle feeders indicated intentions to market 3 percent fewer cattle than last fall. Cattle on feed by weight groups indicate that marketing declines will be at least that low.

October-November nonfed slaughter is likely to remain near the large levels of last fall as both nonfed steer and heifer and cow slaughter will increase seasonally. However, for the quarter, total beef production is likely to be 1 to 2 percent below a year ago. Slaughter during October was near year-earlier levels, but declines in total slaughter are likely in late November through early winter, as fed cattle marketings decrease.

Choice steer prices at Omaha dropped to the low \$60's in late October as retail movement failed to keep up with the larger beef and pork supplies. However, reduced fed beef supplies and lower hog marketings in late fall are expected to strengthen cattle prices into the \$67 to \$69 range. For the quarter, Choice steer prices may average \$65 to \$68, near the summer average but slightly above last fall's \$65.50.

First Half Production Near 1981 Levels,
Second Half Production to Rise

Fall feedlot placements are expected to average well above levels of a year ago when high interest rates and rising feed costs pushed production costs higher, and large summer placements weighed heavily on the fed cattle market. Much lower grain prices, some moderation in interest rates, and a larger feeder cattle supply, plus likely profits in late fall, may support increased feedlot placements. Cattle placed in late summer and this fall, when replacement feeder cattle prices were low and feed costs were declining, should break even with fed cattle prices in the mid-\$60's. These larger placements are expected to bolster fed cattle marketings late in the winter quarter.

Nonfed slaughter is likely to remain above year-earlier levels through the winter quarter. Nonfed steer and heifer slaughter is expected to remain near 1981 levels, but cow slaughter is likely to rise as the beef herd expands and the age of the cow herd increases.

Feeder cattle placements are expected to continue above the depressed year-earlier levels in the first half of 1982. First quarter placements are expected to be well above the 4.7 million net placement level of this past winter. Positive feeding margins from lower input costs and prospects for a stronger economy in the second half of 1982 are expected to provide the primary incentive for increased placements. Second quarter placements are likely to rise only slightly above the large levels of this past spring. Second half placements are likely to increase well above this year's levels, particularly if the 1982/83 feed grain supply appears favorable and the economy strengthens.

Feedlot marketings are likely to begin increasing above levels of a year ago in late winter for the remainder of the year. Fed cattle marketings this winter are likely to be slightly below last winter's level. However, the key to more favorable prices for producers may be holding down fed cattle market weights. In the winter of 1981, weights were at near-record levels. Federally-inspected steer slaughter weights averaged 720 pounds at times last winter, compared to about 690 pounds this summer. Fed cattle marketings may increase 4 to 6 percent in the second quarter. Sharpest year-to-year increases are likely to occur in the second half of 1982 as marketings rise by 5 to 7 percent. For the year, fed cattle marketings may increase about 2 to 3 percent above this year's marketings.

Nonfed steer and heifer slaughter may average near 1981 levels. Slaughter may decline from year-earlier levels next spring, but rise modestly in the second half of the year. Cow slaughter is likely to rise about 4 percent with the spring slaughter near 1981 levels, but increasing seasonally next summer and fall. For the year, total cattle slaughter may rise 3 to 4 percent.

Prices Expected to Increase Modestly

Reduced fed cattle marketings and a leveling off of nonfed slaughter should allow for modest increases in fed cattle prices later this fall and through the first half of 1982. However, continued constrained consumer budgets due to a sluggish economy and large total red meat and poultry supplies will hold down price gains. Choice steer prices at Omaha may average \$66 to \$70 in the first half of 1982. Impacts of a strengthening economy will be about offset by larger fed cattle supplies and large supplies of competing meats in the second half of 1982. Choice steer prices next summer may average slightly above the first half average, before declining to near \$66 to \$70 again next fall. For the year, prices may average only a couple of dollars above ranges of the last couple of years.

Retail Prices to Increase Slowly in 1982

Choice retail beef prices are expected to increase only modestly through the first half of 1982. Per capita beef consumption is likely to remain at or below year-earlier levels through the first half of the year. Pork consumption is likely to decline 7 to 9 percent, and poultry consumption may rise only 1 percent. However, little if any real economic growth through next spring will hold retail beef prices to only slightly above fall quarter 1981 ranges. Year-to-year increases will be larger, however, because of the low prices in the first half of 1981. Retail beef prices may average in the lower \$2.50's in the first half of 1982, up about 2 percent from this fall's mid-\$2.40's average but about 7 to 8 percent above year-earlier prices. Prices in the second half of 1982 may average in the mid- to upper \$2.50's. For the year, Choice retail beef prices may increase about 4 to 6 percent as a sluggish economy and continued large total meat supplies hold down consumers' ability to buy the relatively more expensive beef. The price support for meat prices from next summer's tax cut and improvement in the economy are uncertain. If a larger share of the increase in disposable incomes is directed toward purchases of nondurables, including food, the constraints on consumer food budgets will be eased and beef prices may rise more than anticipated. However, if a larger share of the increase is allocated to increased savings and durable goods, it may be 1983 before meat prices strengthen as the economy expands.

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Although down from a year ago, U.S. pork production continues to be relatively large. Commercial pork production in 1980 totaled a record 16.4 billion pounds, up 8 percent from 1979 and 24 percent more than the 1978 output. Through the first 9 months of 1981, pork output was down 5 percent from a year earlier. For the entire year, production will be almost 15.5 billion pounds, 6 percent less than in 1980, but still the second-largest output on record.

The high level of pork production during the last 3 years has resulted in depressed hog prices. Combined with rising production costs, this has generally been a period of financial losses for most hog producers. This prompted hog producers to cut the U.S. breeding inventory which has shown year-to-year declines since late 1979.

As pork production dropped this year, hog prices strengthened. With declining feed prices and moderating total production costs, the higher hog prices meant improved producer returns. Hog producers have adjusted management plans in reaction to the improved returns and the rate of decline in pork output will moderate. Based on September 1, 1981 hog inventories and producer plans, pork output is expected to decline again next year. The decrease in output may be 4 to 6 percent with the largest declines coming early in the year; late 1982 production may be near that of late 1981. This level of output would still be relatively large, especially considering the expected supply of other meats and consumer's purchasing power next year. Hog prices likely will strengthen in 1982, but continuing large total meat supplies and continued weakness in the general economy will limit the rise. For the year, the average price of barrows and gilts at 7 markets is expected to be \$46 to \$50 per cwt.

World pork supplies have tightened this year. Reduced feed supplies last year resulted in sharply higher feed costs in many countries. Furthermore, slow economic growth in many countries weakened hog prices and put producers in an economic squeeze. This resulted in 1981 world pork production slipping a little below the year-earlier level. World pork output for 1982 is expected to change little from this year's total as larger feed supplies give pork producers a break on production costs.

Feed Costs Lower In 1982

This year's large feed grain and soybean crops have resulted in feed costs dropping sharply below the year-earlier level. With the drought-reduced crops of 1980, hog producers faced sharply rising feed costs in late 1980 and early 1981. First half 1981 U.S. average corn prices were about one-third above the year-earlier level while soybean meal prices rose almost 30 percent. This fall, corn prices may be down 15 to 20 percent from a year ago while soybean meal prices run 25 to 30 percent lower. During first-half 1982, feed costs likely will continue sharply below the year-earlier level. By next summer, feed costs are not expected to be much different from those of this summer. However, many variables including harvest weather this fall, growing conditions for the 1982 crops, and domestic and foreign demand for feedstuffs will affect feed costs from now through 1982.

Feed costs vary significantly by region. Large supplies and transportation costs resulted in corn prices in the western Corn Belt being significantly lower than in other areas. This gives western Corn Belt hog producers a distinct feed cost advantage over producers in areas such as North Carolina, Georgia, and Texas. These feed cost differences will result in different reactions from hog producers.

Demand Prospects Not Optimistic

The outlook for the general economy, particularly through mid 1982, does not indicate much price strength for meats from the demand side. Consumers' budgets have been constrained this year as income growth has been slow and prices for most items have increased. This constraint has made consumers more selective, particular in buying items such as meats where the possibility of switching to lower priced cuts of meat may hold down total expenditures.

Growth in consumer income for the fourth quarter of 1981 and through mid-1982 is expected to continue to be slow. Continued stagnant income growth during this period would continue to constrain consumer budgets. This situation would continue to limit price increases for meats.

During second-half 1982, the rate of growth in consumer income is expected to increase. The July 1, 1982 tax cut will help push disposable incomes higher and the economy is expected to be stronger by then. This should help strengthen hog prices in the last half of next year. However, the degree of strength from higher incomes actually translated into hog prices will depend on how consumers use this income. If there are large shifts to savings and/or durable goods, the rise in income will not strengthen hog prices very much. On the other hand, allocating a large share of the increased income to food and other nondurables could help push hog prices higher.

Regional Changes In Hog Numbers

Significantly different regional production responses in pork output are taking place. The wide swings in corn prices during the last two years are most likely responsible for much of this difference. Corn prices in the western Corn Belt have been much lower, even last year when supplies were tighter, than in other parts of the United States. Hog producers in the western Corn Belt did not reduce their breeding inventory in 1980 and early 1981 as much as their counterparts in other regions, and producers in this area where corn prices are lower, have begun to increase their breeding inventory.

On September 1, 1981 the hog breeding inventory in Iowa, Nebraska, and Illinois was larger than a year earlier, but down in the other 11 States in the quarterly hogs and pigs survey. In those States farthest from the Corn Belt (North Carolina, Georgia, Texas, and Kentucky) the breeding inventory was down 20 percent from a year earlier. Production increases in response to lower feed costs in those States farthest from the Corn Belt, including those not in the quarterly survey, will probably continue to be much slower than that for States like Iowa and Nebraska.

Swings in hog numbers in the major hog and corn-producing States have not been as great as those for most of the other States. Quarterly data for 14 States have been reported since 1973. This September, only 2 States--Iowa and Nebraska--had a larger breeding inventory than in 1973. The breeding inventory in the other 12 States included in the quarterly survey ranged from 55 percent of the 1973 inventory in Texas to 96 percent in Wisconsin. For all 14 States, this September's breeding inventory was 93 percent of the 1973 level. In the 5 States area including Iowa, Nebraska, Illinois, Minnesota, and Missouri, the September 1, 1981 breeding inventory was 101 percent of the 1973 level and even with that of a year earlier. On the other hand, in the 4 States farthest from the Corn Belt--North Carolina, Georgia, Texas, and Kentucky--the 1981 inventory was only 80 percent of the 1973 and year-earlier level. In the other 5 quarterly reporting States, this year's breeding inventory was 83 percent of the 1973 level and down 10 percent from a year earlier.

Fourth Quarter 1981 Pork Output Down--Prices To Strengthen

Pork production this fall is expected to total around 3.9 billion pounds, about 8 percent less than a year earlier. Hog slaughter during this period largely comes from the September 1 inventory of hogs weighing 60-179 pounds. This year, in the 14 quarterly-reporting States, there were 8 percent fewer hogs in this weight group than a year ago. Based on some of the regional differences discussed previously, it is likely that the U.S. inventory was down even more.

Year-over-year comparisons for the early weeks of the fourth quarter might suggest that the decline will not be as large as expected. However, hog slaughter in the early weeks of the fourth quarter a year ago was a little lower than might have been expected, but then weekly slaughter rose sharply into November. As weekly slaughter estimates during November of this year are compared with those of last year, the year-over-year decline

should be substantial. Expected slaughter patterns for this fall suggest a relative tightening of pork supplies for the last half of the quarter. Also, cold storage stocks of pork have been reduced and going into the fourth quarter they were down 7 percent from a year earlier.

The heavy hog slaughter of recent weeks, combined with large supplies of other meats, depressed hog prices. After rising into the low \$50's this summer, prices for barrows and gilts slipped to around \$45 per cwt in mid-October. As pork and other meat supplies tighten in the coming weeks, hog prices are expected to recover and average \$46 to \$48 per cwt. for the entire quarter.

Decline In Pork Output To Continue In First Half 1982

Although not as large as expected last spring, cutbacks in pork production will continue into 1982. First quarter hog slaughter largely comes from the June-August pig crop of the previous year. During June-August 1981, the number of sows farrowing in the 14 quarterly-reporting States was down 4 percent from a year earlier, but the pig crop was down only 1 percent as the number of pigs per litter increased. This was a smaller decline in sow farrowings than had been indicated in June when producers reported that they expected to farrow 7 percent fewer sows in the June-August period than a year earlier. The major change from intentions reported in June to actual farrowings reported in September occurred in Nebraska, Wisconsin, Iowa, and Illinois. Generally in States outside the major corn-producing area, June-August farrowings were down as much or more than was indicated in June. This suggests that farrowings in States not reporting quarterly declined more than for the 14-State average.

First quarter 1982 hog slaughter is expected to be down 7 to 9 percent from the year-earlier level. This is a larger year-over-year decline than might be expected when first looking at the 1-percent decline in the June-August 14-State pig crop. As indicated previously, the U.S. June-August pig crop is expected to have declined more than that for the 14 States. Also, in early 1981 there was a large reduction in the breeding inventory as producers sharply cut the number of gilts added to the breeding herd. If the number of gilts added to the breeding herd in early 1982 is at a more "normal" rate, then this would also contribute to a larger year-over-year decline in first quarter hog slaughter. Another factor affecting the year-to-year comparison is the slaughter pattern that developed in early 1981. With the very mild weather last winter, rates of gain were above normal and hogs reached market weights earlier than usual. This moved hogs to market earlier than normal throughout the winter and into early spring. With more normal weather conditions in the next several months, hog marketings would not be expected to be ahead of the usual pattern and year-over-year declines would be larger than the small decrease in the June-August pig crop.

Second quarter 1982 slaughter may be 4 to 6 percent lower than it was in April-June of this year. Farrowing intentions for the 14 States during September-November are for a 6-percent decline. The number of pigs per

litter is likely to continue above the year-earlier level this fall and the pig crop may not be down quite as much as farrowings. On the other hand, farrowings in States outside the major corn producing region are expected to remain sharply lower than a year earlier with those States not included in the quarterly survey helping hold the U.S. average below that of the 14 States. With corn prices in most of these States not as low as they are in parts of Iowa and Nebraska, the response to the large corn crop will likely be less than it is in the heart of the Corn Belt. Again, a more normal marketing pattern through this winter and spring will affect year-to-year comparisons in slaughter numbers next spring.

Even with the expected reduction in first-half 1982 pork output, the supply of pork will continue to be relatively large. This is particularly true considering that both beef and poultry output will be up from a year earlier. Thus, the large supply of total meats will tend to hold down hog prices. Constrained consumer budgets will also limit price gains. First half 1982 prices may then average \$46 to \$48 per cwt for barrows and gilts at 7 markets, up \$4 to \$6 from the January-June 1981 average.

Second-Half 1982 Prospects

Hog slaughter for the last half of 1982 will come primarily from the December 1981-May 1982 pig crop. In September, hog producers in the 14 States reported intentions to reduce sow farrowings only 1 percent during December-February. No indications have been reported for the March-May farrowings. With the large feed crops and lower feed costs, it is likely that farrowings during the December-May period will be very near the year-earlier level. Again, States not included in the quarterly hogs and pigs survey and those in the survey that are farthest from the major corn producing area likely will remain below the year-earlier level with their farrowings. If this occurs, December-May farrowings will probably be a little shy of the year-earlier level.

Second-half 1982 pork production is then expected to be down slightly from the July-December 1981 total. This lower level of output would be in comparison to reduced production this year and while the year-to-year decline is not as large as indicated for the first half of 1982, it might not be as burdensome a supply as expected in January-June. With some support from improving consumer incomes, hog prices would be expected to rise modestly from the first-half level. A second-half 1982 average of around \$50 per cwt seems likely, up only moderately from the expected July-December 1982 average.

Higher Retail Pork Prices Likely

Retail pork prices have risen in 1981 as pork supplies were reduced and hog prices rose. The large supply of total meats has limited the gain in pork prices, and this is likely to continue into 1982. Pork prices for all of 1981 will probably average around a tenth above the low level of 1980. Prices at the retail level have generally been on a modest upward trend since the spring and this will continue this fall.

In 1982, retail pork prices are expected to continue to edge upward as pork supplies are reduced. Increasing processing and marketing costs in 1982 will also contribute to higher retail pork prices. Retail pork prices during the first half of 1982 may average only slightly above those of fourth quarter 1981, but this would be around a tenth above the low level of first-half 1981. Modest rises in prices from the first to the second half of next year are anticipated and this could result in retail pork prices for all of 1982 rising almost a tenth from the year-earlier level.

The continuing large supply of total meats in 1982 and the constrained consumer budgets will limit retail pork price gains. A tighter meat supply than anticipated and/or stronger demand would result in higher retail pork prices. On the other hand, larger meat supplies and/or weaker demand would result in lower retail pork prices. Thus, given the great amount of uncertainty surrounding both the outlook for meat supplies and the performance of the general economy, there should be a rather wide range around the expected increase in retail pork prices.

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SUMMARY

Record grain harvests and near record production of other major crops in 1981 - combined with slow growth for agricultural exports and domestic livestock feeding - suggest that agricultural commodity prices will not increase sufficiently this crop season to encourage either significant acreage expansion or increased application rates for agricultural chemicals. Interest rates on farm production loans are expected to remain high during the coming planting season, so there seems to be little encouragement for farmers to significantly increase input use. Supplies of fertilizers and pesticides are expected to be ample, so given expectations of nearly stable consumption levels, price increases for these inputs should be moderate, reflecting only increased production and distribution costs.

In 1980/81 wheat area increased around 14 percent, and following record harvests this year, an acreage set-aside program has been announced for the 1981/82 wheat crop. Despite a late, wet planting season in parts of the Corn Belt, a record 8 billion bushel corn harvest is expected this fall. Such a large harvest will discourage increases in corn acres next spring and some analysts believe that acreage could actually shrink, perhaps by as much as a million acres. Since planted grain acreage is a major determinant of agricultural chemical use, expectations of stable or slightly lower wheat and corn plantings suggest that little growth can be expected in fertilizer and pesticide use this crop year.

Material for this speech was contributed by Theodore Eichers and Paul Andrienas, Agricultural Economists, Inputs and Finance Branch, ERS/NED.

PESTICIDES

Consumption

Pesticide demand in 1982 is expected to be about the same as in 1981, estimated at about .75 billion pounds of active ingredients, which was up nearly 5 percent from 1980. Insecticide purchases were up substantially this summer as insect populations built up after 2 successive years of relatively low levels.

Historically, pesticide use increased in the range of 10 to 15 percent annually during the 1960's and 1970's. This growth was largely in increased use of herbicide materials. Growth has leveled off in recent years to around 2 to 3 percent a year. More than 90 percent of the acreage of major crops such as corn, cotton, and soybeans is now treated with herbicides and there is little prospect for much additional growth.

Supplies

Pesticide supplies for 1982 are again expected to be ample with no raw material shortages anticipated. Capacity is more than adequate. Facilities last year were operated at less than 75 percent of rated capacity. Inventories, although down from the previous 2 years, are still above normal.

Prices

Pesticide prices are expected to be up 5 to 10 percent, with somewhat larger increases for some of the newer products. Price increases last Spring averaged between 8 and 10 percent. Herbicide prices were up from one percent for 2,4-D to 22 percent for atrazine. This follows a steady downward trend in the price of atrazine over the last 5 years owing to patent expiration. Insecticide price increases ranged from 5 percent for toxaphene to 15 percent for Furadan.

Regulation

Regulations continue to be an important factor in the farm pesticide decision process. However, the program of major concern to farmers in recent years, The Rebutable Presumption against Registration (RPAR) activity, has slowed down considerably. This is a review process for pesticides registered prior to 1972. As a result of the review, pesticides may be returned to registration, labels may be modified, uses may be restricted, or use of the product may be cancelled. The number of proposed regulatory options issued dropped from 5 in 1980 to one so far this year. However, EPA is relying more heavily on informal negotiations with chemical companies towards voluntarily withdrawing uses with questionable safety aspects. EPA will probably also make greater use of industry data in preparing their regulatory analyses.

Pesticide regulations seem to be a matter of continuing concern to Congress. The pesticide control act, The Federal Insecticide Fungicide and Rodenticide Act of 1972 (FIFRA) has been amended 3 times since 1972, and Congress is currently considering amending the law again. Some amendments now under consideration include: providing greater opportunity for public review of data submitted in support of registration, extending the manufacturers' exclusive data rights period, and limiting the authority of States to establish standards more rigid than those required by EPA.

Mediterranean Fruit Fly

The California Mediterranean Fruit Fly (Medfly) probably drew more attention to pesticides than anything since Rachel Carson's book "Silent Spring" published about 20 years ago. One source reported that more than 15,000 articles were published on the Medfly problem. This episode has demonstrated the importance of pesticides and the importance of proper timing of pesticide applications. The problem surfaced about 15 months ago. However, because of environmental concerns aerial spraying was not started until July, 1981. Approximately 1,500 square miles of citrus, other fruits, and vegetables in Santa Clara, San Mateo, Contra Costa, and Santa Cruz counties are involved in the spray program. The insect pest has not spread to the rich agricultural San Joaquin Valley. Aerial sprays with malathion bait have been made on a weekly basis for a period of about 90 days (sufficient to cover 2 life cycles of the insect). Ground applications were made with diazinon when significant larval areas were observed. Officials estimate that crop losses have been minimal.

Use of malathion in the Medfly program, however, is relatively minor when compared to the 15 to 17 million acres sprayed each year for mosquito control and the 4 to 5 million pounds used annually in agriculture.

Longer Term Forecast

For the longer term pesticides will continue to be essential materials in crop and livestock production. However, improved management practices should enable growers to use pesticides more efficiently and improved production and application methods should also result in more efficient pesticide use. The growing interest in, and adoption of, no-till and reduced tillage practices, will on the other hand, increase the need for both herbicide and insecticide chemicals on such land.

Projections to 1985 made by some industry analysts indicate expected pesticide growth rates of from one to five percent a year in terms of quantities of materials used. Real dollar growth is projected at slightly more because of expected improvements in chemical products used. We anticipate that the growth rates will be at the lower end of this range and that use could even decline as integrated pest management programs are more widely adopted and more effectively used.

FERTILIZER

Consumption

1981/82

Consumption of all three fertilizer nutrients is likely to be close to year-earlier levels in fertilizer year 1981/82* with the possibility of 1 to 2 percent increases for nitrogen and potash. Despite the outlook for no growth in plantings of major crops and for little significant improvement in crop prices, slightly increased fertilizer application rates on existing acreage would be encouraged if fertilizer prices remain near current levels.

Several factors could change 1981/82 fertilizer use from forecast quantities. If adverse crop conditions develop in the Southern Hemisphere, or if other unanticipated world events cause world grain prices to increase significantly, then U.S. fertilizer use could increase more than currently expected.

On the downside, any factor that would significantly reduce corn acres - such as a corn set-aside program - would probably cause fertilizer use to dip below 1980/81 levels.

1980/81

While final consumption statistics are not yet available, preliminary estimates of fertilizer use during the year ended June 30, 1981 indicate that overall consumption was up by perhaps 4 percent, nearing 24 million tons of primary nutrients (N, P₂O₅ and K₂O). Nitrogen use gained the most, probably about 6 percent to around 12 million tons. Phosphate and potash use probably gained 1 to 2 percent from depressed 1980 levels.

More favorable crop/fertilizer price ratios in the 1980/81 fertilizer year were a primary factor behind the increased use of plant nutrients that year. Compared with 1980, crop/fertilizer price ratios for corn and soybeans were more favorable and comparable to 1979 ratios. Ratios for cotton were less favorable for fertilizer use than in 1980, but ratios for wheat were as favorable as in the previous 2 years. A small increase in corn acreage and a 14 percent gain in wheat plantings also contributed to increased fertilizer use last year.

Supplies and Trade

Nitrogen supplies should be adequate this fertilizer year, and phosphate and potash are expected to be plentiful. For two years in a row, domestic phosphate and potash use was lower than the industry expected, and high production levels resulted in a large build-up of producer-held inventories. Exports of phosphate and potash are

* Fertilizer year is July 1 - June 30.

currently down, so inventories have become burdensome. Reductions in production levels are expected to ameliorate the stock excess. In contrast with phosphate and potash, nitrogen supplies are expected to remain in closer balance with anticipated consumption.

International trade in fertilizer products has slowed considerably over the previous year. Overall U.S. exports of fertilizer and fertilizer raw materials during July-September 1981 was down by one-third in volume and one-fourth in value. The recent strength of the dollar has discouraged potential customers for U.S. fertilizer products, as has the generally unfavorable foreign exchange position currently experienced by many developing countries. Exports of all major products were down significantly with the exception of superphosphoric acid (SPA). Shipments of SPA to the Soviet Union recently resumed following the lifting of the embargo on grain and phosphate exports in late April 1981. Overall fertilizer import volumes increased slightly, about 2 percent.

nitrogen

Inventories held by nitrogen fertilizer manufacturers at the end of the 1980/81 fertilizer year were up about 5 percent from a year earlier. A recent Fertilizer Institute survey indicates that, by the end of September 1981, overall nitrogen inventories were only 3 percent ahead of the comparable 1980 levels and anhydrous ammonia stocks were unchanged. The same survey reveals that nitrogen fertilizer production was up only 4 percent while domestic disappearance was up 5 percent. Furthermore, imports of urea and anhydrous ammonia have been lower thus far this fertilizer year compared with last year. For the quarter July-September 1981, urea imports were down by two-fifths and ammonia down by almost 8 percent. Ammonia imports from the Soviet Union were down to about half of last years' level, but increased imports from Canada, Trinidad-Tobago and Mexico partially made up the difference. On the other hand, exports of nitrogen are also considerably behind a year ago. During July-September 1981, U.S. exports of nitrogen solutions fell by 88 percent when compared to the same quarter a year earlier. Anhydrous ammonia, urea and ammonium nitrate exports fell by 67, 43, and 44 percent respectively. The greatest volume of nitrogen is exported as diammonium phosphate (18-46-0), which was down 28 percent.

On balance, domestic nitrogen supplies should be ample to cover domestic requirements, even though the industry is expected to operate at near full capacity in 1981/82 as it did last year, (e.g., 99 percent capacity utilization in January-June 1981).

phosphate

At the beginning of the current fertilizer year (July 1, 1981) manufacturers' inventories of phosphate fertilizers were at record high levels, 14 percent above a year earlier. A more recent survey of most U.S. phosphate firms revealed that, by the end of September, overall phosphate inventories were up by one-fourth.

A survey by the Fertilizer Institute reveals that excessive phosphate inventories have been exacerbated by a 16 percent decline in domestic disappearance of phosphate fertilizer during the quarter July-September 1981. Phosphate producers have responded to falling domestic sales, declining exports, lower prices and burdensome inventories by cutting production 21 percent during the same quarter. Some analysts estimate that about one-fourth of U.S. diammonium phosphate (DAP) capacity has been shut down for prolonged maintenance or has been idled. Manufacturers report that current DAP market prices of around \$160-\$170 per ton, f.o.b. Tampa, are insufficient to cover production costs.

Phosphate exports are also lagging behind the previous year's record levels. Phosphate rock exports during July-September 1981 were 35 percent lower than a year earlier. Exports of superphosphoric acid (70% P_2O_5) to the USSR resumed in June, and July-September 1981 world shipments totalled nearly 225,000 tons compared with 2,700 a year earlier. However, shipments of merchant grade phosphoric acid (54% P_2O_5) fell by around 350,000 tons during the same period. Concentrated superphosphate exports were down by 16 percent while DAP and MAP exports were lower by 28 and 41 percent, respectively. Major customers like India, Pakistan, Brazil, Turkey, and China are all buying less phosphate this year; due to foreign exchange difficulties and/or perhaps they are waiting for the dollar to weaken or the price of phosphates to slip further. Many nations are expected to eventually resume their normal phosphate purchases which would again lead to a strengthening in export prices.

potash

Potash inventories of North American producers were up about 6 percent at the beginning of the current fertilizer year. Combined potash inventories of U.S. and Canadian producers were up by more than two-thirds on September 30, 1981 compared with September 1980. Potash stocks held by U.S. producers on September 30 were equivalent to 63 days production, more than double the year-earlier figure, and the highest level in 4 years.

Potash availability in the United States is greater this year primarily due to increased imports from Canada - up nearly 10 percent during July-September. Increased availability in North America is partially attributable to the sharp drop in offshore potash exports by U.S. and Canadian producers - down by one-half during the same quarter. Foreign potash buyers face the same financial difficulties as phosphate importers.

Prices

Almost flat domestic use and lackluster offshore demand for U.S. fertilizers will dampen fertilizer price increases. Overall fertilizer prices in the 1981/82 Spring season could be up 6 to 7 percent from a year earlier. Nitrogen prices are expected to increase the most, followed by potash. Large carryover stocks of phosphate materials,

continuing into the second quarter of the 1981/82 fertilizer year will discourage phosphate price increases. Phosphate fertilizer price hikes if they occur, will be delayed until the 1982 Spring season.

Retail ammonia and urea prices increased by 1 percent between May and October 1981. Nitrogen prices could exhibit the largest Spring 1981 to Spring 1982 price rise. May 1982 prices could average 10 percent above a year earlier, slightly above the 9 percent increase from May 1980 to May 1981. Relatively low inventories and virtually full capacity utilization of anhydrous ammonia production facilities will encourage nitrogen producers to pass through higher production costs, especially for natural gas. However, almost flat domestic consumption levels, diminished exports, and the potential for increased imports should restrain price increases.

Phosphate prices declined during Fall 1981 because of above average carryover by phosphate fertilizer manufacturers. Average prices paid by U.S. farmers for concentrated superphosphate (TSP) and diammonium phosphate (DAP) fell by 8 percent from May to October 1981.

Prices in Spring 1982 could return to near year-earlier levels as domestic planting activity increases. However, for prices to rise, export trade will have to resume its vigorous pace and continued production cutbacks will be necessary to offset high early-season inventories and stagnant domestic demand. Sudden surging of export demand during the domestic Spring season could cause prices to climb higher than currently anticipated.

October 1981 potash prices were 10 percent higher than a year ago, but equal to May 1981 farm prices. Some increases are foreseen for Spring 1982, averaging about 6 to 8 percent above year-earlier levels. This expected increase is lower than the 15 percent price hike which occurred between May 1980 and May 1981. The current slowdown in world potash demand, plus, the potential for modest increases in North American production will likely restrain further price increases.

Medium Term World Outlook

To place the discussion of the current U.S. fertilizer situation into better perspective, it is useful to consider the outlook for world fertilizer supply and demand and balances for the medium term.

A recent forecast by the FAO/UNIDO/World Bank Fertilizer Working Group indicates that the world's supplies of nitrogen fertilizer may be relatively tight compared with expected consumption for the next 5 years, while phosphate and potash supplies should be ample to meet expected use. Although this forecast is more pessimistic than previous forecasts, it does not represent a fundamental deterioration in the nitrogen supply outlook. Rather, it reflects a different method of accounting for idle ammonia plants (see table).

Nitrogen supply capability is forecast to remain very close to expected consumption through 1985/86. Theoretically, slight deficits could develop beginning in 1982/83, but they account for less than 1 percent of consumption. Last year's forecast predicted nitrogen supply capability surpluses of 2 to 4 million metric tons, but the current forecast points to minimal deficits of 0.1 to 0.7 million tons. Actual physical shortages are not expected, because improved capacity utilization, inventory drawdown, and restarting idle plants are all possible in the short term. However, the forecast does point out the need for early decisions regarding recommissioning idle plants or building new ones.

In preparing its annual forecast this June, the Working Group reversed its former assumptions regarding idle ammonia capacity. In previous years, the group assumed that idled ammonia plants, accounting for almost 5 million metric tons of nitrogen capacity, should be included in the listing of world ammonia capacity as potentially capable of contributing to world nitrogen supplies. However, this year the Working Group agreed that most idle plants in the United States should be excluded from the supply capability list, because many have been closed since 1978 and cannot quickly or easily resume operations. Other idle ammonia plants in Iran, Iraq, and the Soviet Union are also expected to remain inoperative for at least part of the period.

The phosphate supply capability is expected to exceed forecast demand by over 1 million tons of nutrient through 1984/85. This theoretical surplus declines to 0.3 million tons in 1985/86.

Potash supplies are expected to be more adequate relative to consumption than foreseen in last year's forecast. This is due to major capacity expansions in Canada, announced after last year's forecast was prepared. Potash supply capability could potentially exceed consumption by about 2.8 million tons of nutrient in 1984/85.

World Available Supply 1/, Consumption and Balance for Fertilizer 1979/80 to 1985/86
(Million metric tons nutrient)

		:Actual :-----Forecast-				
		: 1979/80 :	1980/81:	1981/82:	1982/83:	1983/84: 1984/85: 1985/86
Nitrogen (N)		:	:	:	:	:
Available Supply <u>2/</u>	:	57.30	60.73	63.35	66.09	68.68 71.13 73.54
Consumption	:	57.16	60.63	63.27	66.19	68.86 71.43 74.21
Balance	:	0.14	0.10	0.08	-0.10	-0.18 -0.30 -0.67
Phosphate (P ₂ O ₅)		:	:	:	:	:
Available Supply <u>3/</u>	:	31.40	33.61	35.38	37.42	39.03 40.19 41.03
Consumption	:	31.08	32.32	34.22	35.87	37.47 39.02 40.74
Balance	:	0.32	1.29	1.16	1.55	1.56 1.17 0.29
Potash (K ₂ O)		:	:	:	:	:
Available Supply	:	23.40	25.70	27.58	28.71	31.90 33.50 33.71
Consumption	:	23.43	25.70	27.33	28.57	29.64 30.69 31.92
Balance	:	-0.03	0.00	0.25	0.14	2.26 2.81 1.79

1/ Available supply is derived by adjusting rated plant capacities to reflect effective operating rates; then this potential supply capability is reduced to account for non-fertilizer uses, losses in processing and distribution, normal stock changes, and the time lag between production and consumption.

2/ Ammonia only.

3/ Phosphoric acid and phosphate fertilizers using other feedstocks only.

Source: Actual 1979/80 statistics are preliminary data reported in FAO Monthly Bulletin of Statistics, March, 1981.

Forecasts for 1980/81 through 1985/86 were developed by FAO/UNIDO/World Bank Fertilizer Working Group, June, 1981. Detailed statistics are published in "Current Fertilizer Situation and Outlook", FERT/81/3, FAO Commission on Fertilizers, Seventh Session, 7-10 September, 1981.

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SUMMARY OUTLOOK

Since the winter of 1980-81, demand for world oil has eased and crude oil prices have declined. This has been caused by increasing production in some countries, by working off inventories and by decreasing demand for crude oil. Inventories in the U.S. have declined from peak levels earlier this year as high interest rates have sharply increased the cost of carrying large petroleum stocks.

Total petroleum use during 1981 is projected to be 4 percent below the 1980 level. If the economy improves in 1982 as forecast in the DOE Short-Term Energy Outlook Report, petroleum consumption would rise by about 3 percent. The increase in consumption is expected to be slight as more conservation efforts are adopted in response to the major oil price increases of the past 2 years.

Agricultural use of energy in 1981 appears to be about the same as in 1980 at about 2 quadrillion Btu. For 1982, we expect farm energy demand to decline slightly as conservation tillage is practiced on more acres and farmers use more efficient diesel powered equipment.

Agriculture will have adequate supplies of all types of energy in 1982 at prices not greatly higher than in 1981. This assumes no major petroleum supply disruption and that OPEC price increases will be relatively small. If these assumptions prevail, energy costs as a percentage of total variable costs in farming will be about the same as in 1981.

The second assumption has proven accurate. On October 29, 1981, the OPEC oil ministers agreed upon a unified base price of \$34 per barrel for crude oil exports. They also agreed to freeze oil prices at that level through 1982.

I. United States Energy Supplies in a World Context

We cannot predict that world energy supplies will continue without interruption. However, a major supply disruption is not anticipated. Total demand for petroleum in 1981 has been sharply lower than in recent years due to higher oil prices and slack economic conditions. To better understand our domestic fuel situation, particularly as it relates to agriculture, we need to place the U.S. petroleum situation in worldwide context. The following items are important:

- o In 1981, free world oil production is predicted to average 45.3 million barrels per day. This is down nearly 8 percent from the 49.0 million barrels per day average in 1980. Of this total, the U.S. is expected to produce about 8.5 million barrels of crude oil this year.
- o United States consumption of petroleum products was 16.2 million barrels per day in 1981, compared with 16.9 million barrels per day in 1980. Imports have declined in 1981 to 5.4 million barrels per day. Thus, imports of crude oil and refined products were about 33 percent of total petroleum products used in the U.S. this year.
- o The declining demand for petroleum products resulted in large part from energy price increases during 1979-1980. As a consequence, major petroleum exporting countries have experienced sharp decreases in revenues. In an effort to bolster their own economies, many oil exporting nations have reduced or discounted their oil prices.
- o The inventories of petroleum and refined products held by private suppliers in the U.S. have been more than adequate for the reduced domestic demand. The high interest rates have caused petroleum storage costs to average about 1.5 cents per gallon per month. Consequently, major oil companies have been reducing inventories and expect by the end of the 1981-82 heating season to have reduced inventories to reflect the current demand.
- o The U.S. Strategic Petroleum Reserve (SPR) held 203.6 million barrels of oil on October 9, 1981. A year ago the level was only 93.8 million barrels. Currently, the SPR has a withdrawal capability of 1.7 million barrels per day which is equal to 40 percent of the current level of crude oil imports, excluding those for the SPR. At the maximum withdrawal rate, the SPR could compensate for a supply interruption of 40 percent of our imports for about 120 days.

During fiscal year 1981 the Reserve was filled at the rate of 292,000 barrels per day. Through the remainder of calendar 1981 and early in calendar year 1982 the fill rate will continue at about 300,000 barrels per day until the bulk of existing storage is filled. For the remainder of calendar year 1982, the fill rate is anticipated to be between 100,000 and 150,000 barrels per day, depending upon availability of funds for the purchase of oil.

- o The Administration decontrolled price and allocation regulations for all petroleum products in January 1981. This action permits petroleum prices to be market-based rather than set by government formula. If supplies become tight, prices will increase and restrain demand. Higher prices should encourage new exploration. In the unfortunate event of a supply disruption, the market mechanism is expected to function infinitely

better in allocating reduced supplies than government regulations based on outdated historical patterns of use.

Major energy supply problems in 1982 are not anticipated because of the current glut of oil on the world market, reduced U.S. petroleum product demand, a greater domestic oil production capability, the much expanded SPR, and the free market pricing and allocation of petroleum in the marketplace in America.

II. Energy Supply Situation and Outlook: Plentiful

Energy supplies throughout 1981 have been plentiful. In fact, there has been enough of a surplus to be called a "glut." Demand is so weak that refineries have been operating only at 66 percent of capacity during the past month or so. This compares to about 85 percent of capacity utilized in 1979 and 76 percent in 1980. Plentiful supplies are forecast for 1982.

Petroleum Fuels

Through the first 9 months of 1981 refined petroleum products were consumed at the rate of 16.2 million barrels per day. This is 4 percent less than in 1980 and 12 percent lower than in 1979. Demand for gasoline and distillate oils was about constant during the first 9 months of 1981 as compared with 1980. Kerosene-type jet fuels were off 4.6 percent due, in part, to reduced flights resulting from the air traffic controllers strike. Residual fuel oil use dropped 15.8 percent from that of a year ago reflecting reduced industrial demand resulting from expanded conservation efforts.

Diesel Fuel.--Diesel fuel is the principal power fuel used in farming. Nearly all new tractors, combines and other farm power machines are diesel powered. In 1980, farmers used an estimated 3.2 billion gallons of diesel fuel. Over the past year, middle distillate supplies have been ample. Diesel stocks during the spring and summer of 1981 were well in excess of the normal operating range.

In recent months distillate fuel supplies have been allowed to decline to reflect more closely the expected lower than usual seasonal demand for home heating oil this coming winter. If the winter is more severe than normal, additional middle distillate supplies can be refined rapidly since there are adequate crude oil stocks and refineries are operating far below capacity.

Farm demand for diesel fuel in 1982 should increase slightly as farmers continue to purchase and use more energy efficient diesel-powered equipment.

Gasoline.--Farmers use about 3 billion gallons of gasoline annually for farm production purposes. This includes all farm business uses but excludes gasoline used for family living purposes and commuting to non-farm employment.

Early in 1981 inventories of gasoline exceeded the normal operating range and refinery runs were lowered deliberately to reduce excessive gasoline stocks.

Farm demand for gasoline for 1982 is likely to range from 2.7 to 3.0 billion gallons. Farmers should have little difficulty in obtaining adequate supplies.

LP Gas.--Liquefied petroleum gas (LPG), primarily propane, is used by farmers to power tractors, combines and irrigation pumps; operate crop drying facilities; and fuel poultry and livestock brooders. An estimated 1.1 billion gallons of LPG were used in farming in 1980, about half of that for crop drying.

International supplies of propane and other liquefied petroleum products have been in surplus for the past couple of years. However, domestic supplies of propane have been tight during that period. Some two-thirds of the propane is obtained during natural gas processing. The remainder comes from refining petroleum products from crude oil. Prior to decontrol, propane was subject to price and allocation regulations. Because natural gas prices were increasing under the Natural Gas Policy Act of 1978 (NGPA), natural gas processors found it more profitable to reinject propane into the natural gas stream than to sell it in the tightly regulated propane market.

Since propane was decontrolled last January, supplies have improved and are adequate to meet domestic demand.

Natural Gas.--The Department of Energy projects natural gas supplies to be sufficient to meet demand over the coming year. A continuing surplus is expected through the winter with a slight inventory increase in underground storage. No major curtailment of supplies to industrial users is foreseen during the winter of 1981-82.

Of all fuels used by farmers, natural gas is the only one for which farmers now have a priority. The NGPA requires interstate pipelines to assign a number two priority to essential agricultural uses. Priority two is immediately below homes, schools, hospitals, and small commercial uses, but above all other industrial uses.

Farmers are estimated to use about 140 billion cubic feet of natural gas directly, primarily for irrigation pumping, crop drying, and livestock brooding. How much of their gas use is from interstate supplies is unknown. For farmers and critical input suppliers such as fertilizer, agricultural chemical and animal feed manufacturers using interstate natural gas, the supply is such that priority two uses likely will not suffer curtailment.

Electricity.--The Department of Energy projects the 1981 generation of electric power to be 2,317 billion kilowatt hours which is 1.3 percent above the 1980 level. For 1982, with stronger economic growth forecast, total electric power generation is projected to be 2,387 billion kilowatt hours. This is 3 percent above the 1981 demand.

Rapidly increasing oil prices have resulted in utilities shifting to other fuels. Coal is now the principal fuel used for electric generation. Electricity produced from coal rose from 51 percent in 1980 to 53 percent in 1981 and is expected to be more than 53 percent in 1982. Production from nuclear power is expected to increase from 11 percent in 1980 to 13 percent in 1982. Electricity from natural gas decreased to 15 percent in 1980 and 1981 and to 13 percent in 1982. Electricity generated from oil is expected to fall from 11 percent in 1980 to 8 percent in 1982.

Farmers used about 32.3 billion kilowatt hours in 1980 for a myriad of production uses. Farm electricity prices rose about 5 percent in 1981.

Prices farmers pay for electricity in 1982 are not expected to rise more than 3 to 5 percent.

III. Petroleum Prices Rise Slightly

Farmers in 1981 paid about 17-18 percent more per gallon of diesel fuel than in 1980. Prices of bulk deliveries of regular gasoline to farmers increased about 10 percent from a year earlier. Propane prices rose the most, about 25 percent more per gallon in 1981 than in 1980.

Price projections for the upcoming year are not at all certain. The Department of Energy short-term price projections through 1982 have one scenario where petroleum prices actually decline in nominal dollars with crude oil costs to refiners dropping \$2.10 per barrel. The more likely scenario has crude oil acquisition costs increasing \$1.16 per barrel from an average of \$35.91 for 1981 to a \$37.07 per barrel average for 1982.

World crude oil prices peaked in February 1981 at \$35.53 per barrel. By October 9 of this year the weighted average international price had dropped to \$33.96, down 4.4 percent.

The OPEC oil ministers agreed in Geneva on October 29 to a uniform pricing policy based on \$34 per barrel of Arab light crude. They also agreed to freeze OPEC oil prices at this level through 1982. They further reduced the premium provided for high quality crude to a maximum of \$4 per barrel for high quality crude from Algeria and Libya. Some ministers believe these premiums are still higher than the economic value of the differential in quality. The premium issue will be reexamined at their next meeting in December.

The DOE now estimates that refiners crude oil acquisition costs will average 2 cents per gallon higher in 1982 as a result of the OPEC action. We would expect farmers' fuel prices to increase by about the same amount.

IV. Producers Increase Fuel Storage as Hedge Against Shortages

The majority of farms have fuel storage facilities. Preliminary results of the 1979 Agricultural Census indicate that about 75 percent of the farms in the Corn Belt have storage facilities averaging more than 500 gallons per farm. On the larger farms where annual petroleum purchases exceed \$10,000, fuel storage facilities averaged about 3,000 gallons per farm.

In the past, farmers have been encouraged to fill their tanks in the off-season to be assured of a substantial supply for their peak planting and harvesting needs. However, with storage costs exceeding 1.5 cents per gallon per month, storing 2,000 gallons for 4 months will cost the farmer \$120. Diesel fuel prices are not expected to increase enough during 1982 to offset that investment, therefore, such an investment is really a risk insurance premium.

V. Government Action to Safeguard Supplies

By deregulating the petroleum industry, the Administration expects the free market to be a more efficient energy allocator in periods of limited energy supplies than was Federal intervention. To further protect the American economy from serious energy supply disruptions, the Reagan Administration has chosen to fill the Strategic Petroleum Reserve at a much faster rate than the previous Administration.

With the expiration of the Emergency Petroleum Allocation Act on September 30, 1981, most standby authority for petroleum product allocation and price controls expired as well.

Congress has held hearings on the need for legislation to provide the President with standby authority to impose allocation and price controls on petroleum products in the event of a severe supply disruption. Several bills have been introduced in the House, and the Senate on October 29 passed S. 1503, "The Standby Petroleum Allocation Act of 1981." Most of these bills provide a high priority for agricultural operations.

The Administration insists that new standby authority is unnecessary and that the President has substantial authority under existing legislation to allocate critical materials, including energy supplies. By relying on the marketplace to effectively allocate existing supplies to essential uses, the Administration is convinced that Federal intervention in the petroleum industry is unnecessary and unwise.

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MITCHELL I. QUAIN
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THE OUTLOOK FOR THE FARM EQUIPMENT INDUSTRY

I have been asked to give you my perspective on the farm equipment industry, that of an investment analyst. Perhaps it is an appropriate year for Wall Street's view of the industry; of the ten major producers of farm equipment on a worldwide basis, only two are projected to be profitable in 1981: Deere and Kubota.

(SEE TABLE - THE FARM EQUIPMENT INDUSTRY-SLIDE)

Even the leader Deere, is now selling in the stock market below its stated book value, implying that the market will not even pay the shareholder's investment for the company.

Here is a run-down of the ten major companies and their positions in the major product lines of the industry.

(SEE SLIDE)

As the agricultural machinery analyst for Wertheim & Co., I am looked upon as a specialist in this area. Actually, my role is much more that of a generalist taking information disseminated from a number of sources, including divisions of the U.S.D.A., digesting it, then analyzing it, in order to bring into better focus for the investment community the trends and future direction of the industry.

The Outlook for the Farm Equipment Industry

In this session I will cover both the good news and the bad news as viewed by the investment community regarding the short-term and long-term outlooks for farm equipment. I hope to provide you with some new insights.

A common misconception of the industry is that the demand for farm equipment should grow in line with the growth in world food demand, on the order of 37% annually. Unfortunately, this is not so. Industry demand is proportional to:

- 1) the amount of work to be done in the farm sector;
- 2) equipment's share of the work; and, finally,
- 3) the cost of the equipment.

World grain production is certainly an important variable, but it is only one influence on the amount of work to be done. Other variables, at least in the U.S. are probably more important, including yield versus acreage growth, and minimum-tillage farming. With most of future growth in output projected to come from increased yield rather than greater acreage, the impact of overall growth in grain output will be mitigated in terms of equipment requirements. Higher yields perhaps result in somewhat greater combine needs for harvesting, but generally the result of increased yields should be reduced "equipment intensity", that is, equipment consumed per ton of output should decline.

Minimum and no-till farming methods have grown to 47% of total farming from 15% in 1972. The effect has been to reduce tractor horsepower required as the equipment-intensive, moldboard

The Outlook for the Farm Equipment Industry

plowing operation is reduced. Overall, the amount of work to be done on the farm in the U.S. is probably a negative influence on equipment demand in the eighties compared to the positive influence it exerted in the seventies.

How about equipment's share of total work? Still a positive influence, but not to the extent it has been historically. The tractors sold today are replacing smaller tractors, substituting one operator for multiple tractors and operations. The most robust areas in the capital goods field are those where the direct replacement of manpower is still applicable - industrial robots perhaps an example. A second important factor contributing to continued increases in U.S. equipment intensities after 1960 was a shift in the mix of area devoted to various crops. Differences in equipment consumed per acre for various crops in any given region reflect primarily differences in the amount of work each requires, which in turn reflect differences in production methods. For example, measured in horsepower-hours or HPH, more work per acre is required for corn than for soybeans, and for soybeans than for wheat.

(SEE EQUIPMENT INTENSITY BY MAJOR CROP IN U.S. SLIDE)

Based on these estimates, the importance of shifts in the mix of area devoted to various crops becomes obvious, and since 1960 there has indeed been a shift toward more work-intensive crops. Harvested acreage for corn increased to 25.8% from 22.7% of the total, soybeans increased to 17.6% from 11.6%, hay declined to 19.8% from 26.8%, and wheat plus all other crops (mostly other small grains) declined to 36.8% from 38.9%.

The Outlook for the Farm Equipment Industry

Additional factors of lesser importance that have contributed to higher equipment intensities in the U.S. include: (a) premature retirement of equipment as part of the trend toward larger farms; (b) acquisition of standby equipment to hedge the risk of downtime in critical machines; (c) addition of operator convenience, safety and comfort options (e.g., air conditioning, stereo systems) that add less to productivity than to costs; and (d) a tendency, induced by prosperity, to employ more powerful and faster equipment than is necessary for reasons of status and to increase leisure time.

Finally, cost of the equipment. A second mitigating factor was declining equipment costs per HPH in real terms. Improved equipment productivity per constant dollar cost is attributable largely to general rise in the size of tractors, their implements, and combines in use on U.S. farms. For example, average horsepower per tractor increased from 32.6 in 1960 to 117.2 in 1980. Underlying the inverse relationship between equipment size and cost per HPH as shown in this table, are primarily design and engineering economies such as the need for only one steering wheel regardless of size. Experience curve economies as a function of rising cumulative volume have also contributed to lower equipment costs per HPH, and have probably offset the adverse effect of declining annual unit volume on manufacturing scale economies. A final contributing factor to lower equipment costs per HPH has been a general upgrading in the skill of operators.

(SEE TABLE COST PER HORSEPOWER-SLIDE)

A third factor mitigating against higher equipment intensity in the U.S. has been the development of certain more productive machines, such as the rotary combine. The first combines introduced in the 1930's accomplished the harvesting task with less work through more efficient technology. Since then, further technological improvements have been made in the efficiency of conventional combines such that expert operation will leave only 3%-5% of the crop in the field, with average losses at present of 6%-15% depending on the crop. The benefits include higher capacity for their size, less grain damage, greater maneuverability, fewer moving parts and reduced vibration, all of which, on average, is supposed to add up to 17% greater efficiency at 10% lower manufacturing costs. Increasing acceptance of rotary combines has consequently lowered the average equipment cost per HPH and raised average yields per acre.

On balance, the U.S. farm equipment industry is projected to exhibit negligible growth through the eighties relative to its prior peak in 1979. Horsepower sales in 1986 is estimated to reach the 1979 level. Combines, positively influenced by the increases in yield and without the negative affects of minimum tillage farming, have a somewhat brighter outlook, with real growth (measured in equivalent units) actually showing a 5% ratio of growth.

The Outlook for the Farm Equipment Industry

Outside the U.S. the situation is worse. Wertheim did a study in 1978 which concluded that the European market through 1985 would show a slight decline in total horsepower sold. We said the Japanese market, a small market for the domestic producers, but very important in terms of competitive strategy, would show even a greater decline, about 5% annually in horsepower shipments through 1985. So far this negative forecast has proved to be correct and I think it will continue through 1985. The U.S. or North American farm machinery industry is by far the most mechanized, most automated industry in the world. The best measure of that is the ratio of the number of tractors to the number of workers on the farm in various industrialized countries.

(SEE TABLE MECHANIZATION-SLIDE)

That ratio is the most favorable in the U.S. and Canada and then trends downward. However, if one looks at the way farming is being done around the world, if by horsepower per acre, a very different relationship exists. Let me use Japan as the example because that is where you can see it most vividly. The average Japanese farm is about 2½ acres. The farmer, for example, is working at the local Pepsi plant during the week and farming on the weekends, with a 16 horsepower tractor, giving an average of about 8 horsepower per acre. As those farms consolidate, which will take time, the trade-up to much larger tractors will result in substantially reduced horsepower, although as others have pointed out, certainly a very favorable trend in mix towards

The Outlook for the Farm Equipment Industry

larger tractors exists. That will take a long time in Japan, but it is happening quite rapidly in Europe. The European market does not have as much horsepower on the farm as in Japan but ironically, quite a bit more in the U.S. While the cyclical influence of fixed commodity prices is a factor determining the cycle, it is that farm consolidation in Europe (albeit causing sales of larger machinery) which will continue to cause total horsepower sales to decline. The only markets for farm equipment with above average growth prospects through the eighties are a handful of what might be called RDC's or rapidly developing countries. Such countries as Nigeria, Indonesia, Brazil, Venezuela, Argentina and Mexico, where an exportable commodity, oil in most cases, coupled with an industrialized sector of the economy to employ laborers from the rural sectors could allow factor number two to increase the equipment industry as machinery gains share from other inputs.

Overall, not a bright picture. No growth in the U.S., negative trends in most other areas and the only exciting developing countries dominated by Massey-Ferguson, today owned by the commercial lenders and the Canadian government. My projections for the U.S. combine and tractor markets are highlighted: (SEE TABLES TRACTORS & COMBINES-SLIDE) Yet two factors do make it an interesting, even appealing industry from an investment perspective: The first is the competitive environment; the second is the cycle.

The Outlook for the Farm Equipment Industry

The farm equipment industry is characterized today by vigorous competition in slow motion. The vigor lies in the stringent demands upon manufacturers to keep up with technological improvements in products and to maintain competitiveness in terms of motion results from the industry's maturity, the infrequency of purchase by any given customer because of the long economic life of the equipment, and the strong brand loyalties that influence most purchase decisions.

Of all sectors of machinery, the farm equipment industry perhaps has the strongest brand loyalty. At last year's Farm Progress Show in Iowa, while standing next to a farmer wearing a Deere hat we viewed the new rotary combines -- produced by most companies except Deere. He marveled at it, turned to me and said, "It's nice, but if God wanted me to use a rotary, Deere would make it".

In essence, brand loyalty means that "I've been buying a White Motor Tractor for years. . .my dealer lives twelve miles from me. . .I'm playing bridge with him every Thursday night. . .and who cares if White is going belly up".

However, this way of thinking is beginning to change as a result of the financial requirements in this business -- but the change has only started. In talking to dealers, it's remarkable how little of the financial problems of some of these companies have affected farmer buying decisions. It's only now when a farmer tries to order a tractor and, as was

The Outlook for the Farm Equipment Industry

mentioned, tries to finance it through a credit subsidiary, that he's told something to the effect that the parent company will be doing no more commercial paper that his buying decisions are affected.

Besides brand loyalty, competition in the farm equipment industry is affected by several other factors. A company's financial strength is becoming more important due to the trend toward a more capital-intensive production strategy, high interest rates and retail financing requirements. This year, two-thirds of purchases are being financed compared to 40% in 1980. Another factor is an investment commitment to research and development, with a long-term time horizon - rather than an attempt to survive until the next quarter. Finally, the strength of the dealer organization and marketing back-up are of paramount importance.

As can be seen from this table, Deere has widened its position of leadership in the industry. These are actual numbers taken from the farm equipment data released publicly by the companies. (SEE RELATIVE POSITION TABLE-SLIDE). The last three factors I mentioned -- financial strength, a long-term commitment to R & D, and a strong dealer organization and marketing -- will probably contribute to Deere's gains to a greater extent than in the past due to the financial difficulties of some of its competitors.

The Outlook for the Farm Equipment Industry

The gains in market share Deere achieved in the past -- despite the difficulties of taking away customers from other manufacturers -- were actually achieved through the farmers. Demographically, Deere has the highest market share with the Class 1-type farmer who is buying his neighbor's farm and trading in a White Tractor, for example, for a Deere machine. Most experts, including those here at the USDA, expect this trend to continue.

The near-term outlook - predicting the farm equipment cycle, which results from equipment sales differing from equipment consumption, is partly what managements of these companies get paid for.

Farm purchasing power is the prime determinant of equipment sales from one year to the next, influenced by gross cash receipts and net farm income, which are principally determined by commodity prices, in turn, related to the supply and demand for agricultural commodities. The USDA has continued to boost its estimates of world carry-over stocks of grain which to a generalist implies sluggish growth in farm purchasing power. Again, if I could accurately predict commodity prices I would not be involved with the stock market, but in the commodities market.

Other influences on equipment demand also continue negative, including the financial condition of the farmer and the cost and availability of credit. Farm debt grew by 14% annually

The Outlook for the Farm Equipment Industry

from 1975 to 1980, in the face of flat farm income and the first declines in property values. The farmer is leveraged as much as some of the secondary equipment suppliers.

(SEE TABLE - DEBT - SLIDE)

On a more positive note, interest rates are expected to come down in the early part of 1982, since the real cost of money (interest rates less inflation) are at the historically high end of the range.

Finally, the capacity and suitability of equipment in the field. Following a poor 1980 and now 1981 year for equipment sales, the stage is set for an equipment recovery. Last year marks the first year ever for a decline in the overall horsepower pool in the U.S. Assuming that this is an aberration, some improvement could result from marginal increases in the horsepower pool. However, replacement demand, the larger component of sales is still running at over 4% per year; that is 4% of the total horsepower on the farm is being replaced annually, compared to an average 3.6% since 1960. Downside risk would appear to exist if industry fundamentals are to worsen, in light of the experience in the 1968 - 1971 period when replacement turnover dropped to slightly below 3%.

(SEE TABLE - REPLACEMENT DEMAND SLIDE)

On the other hand, a disappointing Soviet crop could set the stage for a cyclical rebound in machinery sales even further above trend levels.

The Outlook for the Farm Equipment Industry

Don't get too excited: at the end of September there was enough equipment in dealer inventory to supply months of sales. On balance, farm equipment is an important link in the farm chain, with good competitive characteristics for some of the companies, and from this depressed level making for a cyclical upturn.

Finally, a 3% gain is expected next year, getting the industry back to the 1980 level.

(SEE TABLE RETAIL SALES-SLIDE)

THE AGRICULTURAL EQUIPMENT INDUSTRY

1980 Summary
(\$ Millions)

XXX Denotes Leading Position
XX Denotes Major Participation
X Denotes Minor Participation

	Deere (Green)	Int'l. Harv. (Red)	Massey- Ferguson (Red)	New Ford (Blue & White)	Holland (Red & Yellow)	Fiat (Orange)	Kubota (Green)	J.I. Case (b) (White)	Allis Chalmers (Orange)	White(c) (Silver & Black)	Industry Sales
Tractors:											
Under 120 hp (d)	XX	XX	XXX	XX	XX	XX	XX	XX	XX	X	\$ 7,200
Over 120 hp (e)	XXX	XX	XX	X	X	X		XX	XX	X	4,500
Four Wheel Drive (f)	XXX	XX	X	X(g)				XX	XX	X	1,200
Combines:											
Pull-Type	XXX	XX	XX	X	X		X		XX	X	600
Self-Propelled (h)	XXX	X	XX	X	XX		X		XX	X	2,700
Rotary		XXX	X							X	500
Harvesters											
Forage (i)	XX	XX	XX		XXX				XX		1,000
Cotton & Beet	XXX	XX							XX		200
Hay Tools (j)	XX	XX	X	X	XXX					X	2,100
Plows & Harrows	XX	XX	XX	X			X	X	X	X	1,100
Planters	XXX	XX	XX				X	X	XX	X	400
Other (k)	XX	XX	XX		XX						700
U.S. Sales	\$3,430	\$1,450	\$ 600	\$ 390	\$ 550	\$ 70 (1)	\$120	\$ 675	\$ 520	\$ 350	\$22,200
Foreign Sales	1,060	1,060	1,740	810	490	1,180	770	225	160	0	8,000
Total	\$4,490	\$2,510	\$2,340	\$1,200	\$1,040	\$1,250	\$890	\$ 900	\$ 680	\$ 350	14,200
% of Total Co. Sales	82%	40%	75%	3%	22%	15%	35%	37%	33%	33%	
Market Share:											
U.S.	43%	18%	8%	5%	7%	1%	1%	8%	7%	4%	
Foreign	7	7	12	6	3	8	5	2	1	0	
Total	20%	11%	10%	5%	5%	6%	4%	7%	3%	2%	

- (a) A division of Sverry Rand Corp.
 (b) A subsidiary of Tenneco, Inc.
 (c) Farm equipment division divested in December 1980.
 (d) Other participants include Yanmar, Iseki, Sato, and Toyosha in Japan, Deutz in West Germany, and Belarus in Russia.
 (e) Other participants include Deutz and Belarus.
 (f) Other participants include Steiger Tractor (35% owned by IH), Versatile Mfg. in Canada and Northern Mfg., producer of "Big Bud."
 (g) Supplied by Steiger.
 (h) Other participants include Avco, and Claas and Fahr in West Germany.
 (i) Other participants include Kihl in the U.K., Gehl, Fox, Claas and Fahr.
 (j) Other participants include Hesston, Ramfords in the U.K., Claas and Welger in West Germany and Riviere Casalis in France.
 Products include mowers, mow-conditioners, rakes, balers, windrows, and bale wagons.
 (k) Other participants include Avco. Products include sprayers, dusters and manure spreaders.
 (l) Includes tractors distributed in the U.S. by Hesston.

7/8/81
 11/2/81
 12/1/81
 1/2/82

Relative Positions of Major Farm Equipment Producers

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Deere	22.2%	20.8%	21.0%	23.0%	22.9%	23.5%	24.8%	24.6%	24.0%	23.1%	23.9%	25.2%	25.0%	29.4%
Int'l Harvester	21.6	21.1	19.1	19.6	20.4	20.2	19.3	20.1	19.8	19.5	19.0	17.9	19.5	15.1
Massey-Ferguson	15.6	15.6	16.8	15.5	17.3	16.6	16.8	15.9	17.0	17.3	15.9	15.0	14.2	14.4
Kubota	3.6	3.4	3.5	3.5	3.6	4.2	4.4	5.4	5.5	5.3	6.7	8.0	6.1	6.1
Fiat	6.5	8.0	7.8	8.1	6.6	6.2	6.4	6.4	6.4	6.5	6.9	7.3	6.7	6.7
Ford	9.8	11.3	12.7	12.7	12.0	12.7	10.1	8.8	8.5	8.9	9.2	7.3	8.9	8.0
Sperry-New Holland	4.4	4.6	4.9	5.7	5.3	4.9	4.9	4.8	5.0	5.7	6.1	6.6	6.9	7.7
J. I. Case	5.4	4.8	5.1	3.8	4.0	4.1	5.6	5.4	5.7	5.9	5.3	5.9	5.8	5.8
Allis-Chalmers	5.4	5.5	5.4	5.5	4.8	4.6	4.6	5.1	4.8	4.8	4.4	4.4	4.4	4.4
White	5.5	4.9	3.7	2.6	3.1	3.0	3.1	3.5	3.3	3.0	2.6	2.4	2.5	2.4
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Sales (mil.)	\$4,168	\$4,022	\$3,984	\$3,949	\$4,202	\$5,072	\$6,438	\$8,220	\$10,620	\$11,554	\$12,297	\$13,095	\$15,736	\$16,330
Yr.-Yr. Change	-	(3.5)%	(0.9)%	(0.8)%	6.4%	20.7%	26.9%	27.7%	29.2%	8.8%	6.4%	6.5%	20.2%	3.8%
Price Increase*	-	4	4	4	5	7	10	12	21	8	6	7	9	8
Real Growth*	-	(7)	(5)	(4)	1	13	16	14	7	1	0	(1)	11	(4)
Tonnage Index(1967=100)	100	93	88	84	85	96	111	127	136	137	137	136	151	146

* Wertheim & Co., Inc. Estimates.

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Selected Data 1967-1980*

World Grain Production

	World Grain Production			World Consumption (MMT)	Surplus (Deficit) (MMT)	End of Yr. Stocks (MMT)	Prices (\$/Bu.)		Net Farm Income (Bil.)	Farm Equipment Shipments (Bil.)
	Wheat (MMT)	Coarse Grain (MMT)	Milled Rice (MMT)				Wheat (\$/Bu.)	Corn (\$/Bu.)		
1960/81E	438.2	727.2	266.4	1431.8	(20.2)	171.2	\$3.83	\$3.03	\$22.00	10.89
1979/80	422.3	740.0	253.8	1416.1	(27.7)	191.5	3.88	2.70	19.86	11.58
1978/79	446.6	753.8	259.2	1459.6	27.3	219.2	3.51	2.36	32.70	10.12
1977/78	384.4	700.7	248.8	1333.9	(0.1)	191.7	2.82	2.10	26.46	8.62
1976/77	421.2	704.4	236.2	1361.8	54.8	192.0	2.29	2.03	18.39	8.18
1975/76	349.0	635.2	243.2	1227.4	2.1	132.0	3.15	2.49	18.68	7.48
1974/75	356.0	621.0	227.3	1200.4	(11.6)	129.9	3.68	2.70	24.48	7.05
1973/74	371.6	660.8	223.5	1251.8	5.8	141.5	4.48	2.92	26.13	5.96
1972/73	343.4	602.8	208.2	1150.3	(41.5)	135.6	3.16	1.89	33.35	4.46
1971/72	348.4	621.9	214.6	1182.2	17.6	177.1	1.57	1.17	18.67	3.68
1970/71	315.7	569.1	210.7	1093.7	(39.0)	159.4	1.36	1.27	14.63	3.00
1969/70	309.9	570.9	203.5	1083.4	(13.7)	198.5	1.33	1.23	14.15	2.88
1968/69	328.6	545.7	195.4	1069.7	31.2	212.2	1.26	1.13	14.29	2.92
1967/68	297.3	541.4	193.8	1031.2	19.6	181.0	1.30	1.04	12.32	2.65
1966/67	308.7	517.7	179.4	1004.3	26.2	161.4	1.47	1.17	12.34	2.75

* Crop years for production and consumption data, calendar years for prices income and shipment data.

Source: USDA; DOC

job #3904, rl silver, slide #

A Ten-Year Review of Farm Debt by Various Lenders

Amount outstanding, December 31						
	1970	1975 (billion dollars)	1979 (billion dollars)	1980		Market Share (percent of total)
				Amount	Change* (percent)	
Nonreal estate						
Banks	11.1	20.2	31.0	31.6	1.7	46
Production credit associations**	5.5	11.1	19.0	20.8	9.9	23
Farmers Home Administration***	.8	1.8	11.4	14.4	26.1	3
Commodity Credit Corporation	1.9	.4	4.5	4.4	- 3.0	8
Individuals and others	4.8	6.4	9.3	11.4	22.3	20
Total	24.1	39.8	75.2	82.5	9.7	100
Real estate						
Banks	3.8	6.3	8.6	8.7	1.4	12
Federal land banks	7.1	16.0	29.6	35.9	21.3	24
Farmers Home Administration	2.4	3.4	7.1	7.7	8.5	8
Life insurance companies	5.6	6.7	12.2	12.9	6.3	18
Individuals and others	11.4	18.7	25.1	26.7	6.2	37
Total	30.3	51.1	82.7	92.0	11.3	100
Total farm debt						
Banks	14.9	26.5	39.7	40.3	1.7	27
Farm credit system****	12.7	27.1	48.6	56.8	16.8	23
Farmers Home Administration***	3.2	5.1	18.5	22.1	19.3	6
Life insurance companies	5.6	6.7	12.2	12.9	6.3	10
Commodity Credit Corporation	1.9	.4	4.5	4.4	- 3.0	3
Individuals and others	16.2	25.1	34.5	38.1	10.5	30
Total	54.5	90.8	157.9	174.5	10.6	100

*From previous year.

**Includes a small amount of loans discounted by Federal Intermediate Credit Banks for financial institutions other than product credit associations.

***Figures for 1979 and 1980 include \$2.4 billion and \$2.6 billion in estimated outstandings held by the Small Business Administration.

****Figures for the farm credit system represent the total for production credit associations and federal land banks.

Cost Per Horsepower

<u>Tractor Horsepower</u>	<u>Average Price</u>	<u>Cost Per Horsepower</u>
40	\$12,000	\$300
60	16,500	275
80	20,000	250
100	22,500	225
120	24,000	200
140	28,000	200
160	32,000	200

Source: Various company publications.

job #3904, rl silver, slide #7

Equipment Intensity by Major Crop in the U.S.*

	1963			1980		
	Planting	Harvesting	Total	Planting	Harvesting	Total
Corn	\$10.00	\$ 3.30	\$13.30	\$ 11.50	\$ 4.10	\$15.60
Wheat	15.70	5.20	20.90	18.10	7.20	25.30
Soybeans	26.60	7.40	34.00	29.90	10.30	40.20
Sorghum	14.50	5.00	19.50	16.70	5.70	22.40
Grain Avg.**	\$12.95	\$ 6.60	\$19.55	\$ 13.40	\$ 7.80	\$21.20
Hay	3.20	4.80	8.00	3.70	6.50	10.20
Overall Avg.	\$ 9.10	\$ 4.60	\$13.70	\$ 10.20	\$ 5.80	\$16.00

* Cost in constant 1980 dollars per metric ton of output.

** Includes equipment consumed in the production of harvested roughage.

Source: Wertheim estimates

job #3904, r1 silver, slide #3

Industry Forecast U.S. and Canada Retail Sales

<u>Product Line</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>% Change 1980-81</u>	<u>% Change 1981-82</u>
Tractors Over 40 HP	166,126	145,002	138,374	145,348	- 5%	+ 5%
Combines	37,376	29,859	32,788	32,865	+10%	-
Planter Rows	242,945	189,016	227,412	226,748	+20%	-

job #3904, rl silver, slide #8

10/16/81
M. G. G. G.
G. G. G. G.
Ag.

Replacement Cycle Data

	Tractors (Million Horsepower)		Sales		Replacement Turnover		Combines (000 Units)		
	Total On U.S. Farms*	Replacement	Additions	Total			Total On U.S. Farms* (000)	Sales	Sales/ Total
1981E	275	12.5	2	14.5	4.5%		664	27.0	4.1%
1980	277	16.2	(2)	14.2	5.8		667	25.9	3.9
1979	269	11.1	8	16.1	4.1		669	32.3	4.8
1978	266	10.5	3	15.5	3.9		671	31.5	4.8
1977	260	8.4	6	14.4	3.2		663	28.8	4.4
1976	256	11.0	4	15.0	4.3		686	32.5	4.8
1975	250	9.7	6	15.7	3.9		706	32.1	4.6
1974	247	12.7	3	15.7	5.1		709	31.6	4.5
1973	240	9.8	7	16.8	4.1		733	35.1	4.8
1972	237	9.2	3	12.2	3.9		768	27.9	3.7
1971	234	7.1	3	10.1	3.0		798	27.3	3.5
1970	231	6.8	3	9.8	2.9		828	26.7	3.3
1969	227	6.4	4	10.4	2.2		855	na	na
1968	223	6.9	4	10.9	3.1		875	na	na
1967	217	6.1	6	12.1	2.8		896	na	na
1966	212	5.2	7	12.2	2.5		913	na	na
1965	202	4.3	6	10.3	2.1		728	na	na
Avg.		8.8	4.4	13.2	3.6				

* At beginning of year.

job #3904, rl silver, slide #2

International Comparisons of Mechanization

	Percent of Labor Force Engaged in Agriculture			Economically Active Population		1979		1979		Tractors	
	1950			1970 (000)		Employment		Number of		Per 1000	
	1960	1970	1979	1970	1979	Per 1000	Per Worker	Tractors(d)	Hectares	Per 1000	Per 100 Workers
	1950	1960	1970	1970	1979	(000 ha)					
United Kingdom	5.18	3.88	3.28	784	632	7001	11.1	480.3		69	76.7
Belgium	10.4	8.1	4.7	174	119	891	7.5	109.7		123	91.8
United States	11.2	7.6	4.5	3566	3455	191520	55.4	4370.0		23	127.8
Canada	19.7	10.7	7.6	604	589	44300	75.2	656.9		15	115.4
Sweden	20.3	13.8	8.1	314	242	2997	12.4	189.0		63	77.8
Netherlands	19.3	11.0	7.2	329	279	857	3.1	168.0		196	60.1
Australia	N.A.	10.9	8.0	434	399	42683	107.0	332.0		8	88.9
W. Germany	22.9	14.2	8.6	2262	1558	8023	5.1	1462.3		182	93.8
Denmark	25.1	17.5	11.5	266	207	2656	12.8	139.9		71	91.0
Norway	25.9	19.5	13.9	208	161	806	5.0	121.2		150	75.0
France	N.A.	21.2	13.9	2821	1897	18893	10.0	1413.0		75	75.0
Japan	N.A.	27.6	17.4	8860	6130	4940	0.8	1050.0		213	17.2
New Zealand	18.4	14.4	12.9	139	141	450	3.2	94.4		210	67.1
Austria	32.3	22.8	18.8	560	326	1645	5.0	307.6		187	94.4
Italy	43.9	31.3	20.2	3878	3012	12401	4.1	953.2		77	31.7
Spain	48.8	41.1	29.5	3662	2314	20578	8.9	455.7		22	19.6

- (a) Includes all economically active persons engaged principally in agriculture, forestry, hunting and fishing, but excludes their nonworking dependants.
- (b) Includes land under both temporary and permanent crops, with double-cropped areas counted only once, and land temporarily fallow. Permanent meadows and pastures are excluded.
- (d) Generally limited to those over 8 horsepower.

Source: United Nations

COMBINE EQUIVALENT UNITS

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
100000																							
89000																							
79000																							
68000																							
58000																							
47000																							
36000																							
UNITS																							
YEAR																							
																			ACTUALS		FORECAST		
																			1979	1980	1981	1982	1986
EU (000)																			74.9	63.0	69.8	70.9	78.7
UNITS (000)																			37.4	29.9	32.4	32.9	33.8

Million HP Over 40

[illegible]

INDUSTRY ENDING RECEIVABLES

AS A % OF YEAR RETAIL SALES

U.S. AND CANADA

	ENDING JUNE	
	<u>4-YEAR AVERAGE</u>	<u>1980</u>
		<u>1981</u>
TRACTORS	52%	66%
COMBINES	62%	76%
		72%
		77%

Eva E. Jacobs, Bureau of Labor Statistics

1982 Agricultural Outlook Conference, Session #17

For Release: Tuesday, November 3



The Bureau of Labor Statistics (BLS) has initiated a program of continuing Consumer Expenditure Surveys (CE). Field work, performed by the Bureau of the Census, was begun late in 1979. This program is designed to provide timely data on family expenditures. In the past, BLS conducted expenditure surveys about every 10 years, most recently during 1972-73.

That survey was undertaken to revise the weights and associated item samples of the Consumer Price Index and to help meet the need for information on how American families earn and spend their income. Data from the survey, showing income and expenditures for families with various socioeconomic characteristics, were made available in a series of publications beginning in 1975.¹ Tapes of the micro data also are available for public use.

The unique contribution of the BLS survey is that the expenditures can be related to the characteristics of the family. In the BLS published tables, we show expenditures by income class, family size, age of head, region and other characteristics. Even more characteristics are available from the Public Use Tapes. For instance, staff of the Department of Agriculture has used the tapes to analyze the difference in component food expenditures by food stamp participants and non-participants.²

It has long been apparent, however, that more timely data are needed. Aggregate consumption data for the country as a whole are available on a current basis from the Department of Commerce National Income and Product Accounts. These estimates are derived largely from producers and other sellers and therefore do not contain any information about different kinds of families.

Gearing up for a decennial survey is always expensive and time consuming and the data, when available, are no longer current. In a time of rapidly changing economic conditions, the lack of timely data is particularly frustrating. For instance, because the oil embargo occurred late in 1973, the 1972-73 survey data do not reflect the resulting adjustments in many families' expenditure patterns. Lack of a current survey has also precluded study of the impact of recent inflation on the consumption patterns of different population groups. More frequent, regular surveys would not only provide users

with timely data, but lead to more efficient processing, thereby shortening the time between collection and dissemination. A continuing survey can be improved over time and result in better data.

A proposal for more frequent surveys was made as long ago as 1953. It was not until 1976 that the advantages of an ongoing survey for use in policy making persuaded Congress to authorize funding for planning a Continuing Expenditure Survey. We are now in the second year of data collection and the computer system for processing and editing the data is being completed. The preliminary 1980 data are being processed and reviewed by the Census Bureau and BLS. It is hoped that some data will be available to the public by mid-1982 and that the time period between collection and dissemination will be shortened considerably as the survey progresses.

The continuing survey will rely on survey methodology similar to that used for the 1972-73 survey.³ The survey is actually two separate surveys: The Quarterly Interview Survey and the Diary Survey. In the Interview Survey a sample of families is interviewed every quarter 5 times to obtain most major components of expenditure: housing, durables, clothing, etc. as well as income, assets and family characteristics. The Diary Survey is designed to obtain detail of frequently purchased items that do not lend themselves to long recall such as food at home, housekeeping supplies, personal care items and the like. A separate sample of families keeps a diary for 2 one-week periods. The demographic composition of the family and income information are obtained in a short interview. Because of cost limitations, the sample is smaller. About 4800 completed schedules are expected from each survey compared to the 10,000 per year in the last survey. However, data for several years can be averaged to provide data of equal statistical reliability.

There are four main objectives of a continuing survey: (1) to provide information on consumer expenditures to support future Consumer Price Index (CPI) revisions; (2) to provide a flexible data collection system, serving a wide variety of social and economic analyses; (3) to provide the data needed by BLS to make timely revisions in the Family Budget program; and (4) to provide a continuous body of detailed expenditure and income data for research purposes.

What can we expect to learn from these surveys? We have examined the changes that took place between 1960-61 and 1972-73 in the shares of each component. The major shift, for all income classes, was the increase in transportation expenditures. For all families this component rose from 15 percent of consumption in the early 60's to 21 percent a decade later. This was the result of an

increase in the number of autos owned per family, increased use per family and ownership of autos by a larger proportion of the population. This share should increase further as a result of the higher relative increase in gasoline prices since 1973 but stabilize as those prices stabilize. Housing costs also increased as a share of total expenditures. Higher homeowner costs and large relative increases in the price of fuel and utilities are likely to raise this component's share further.

Food, on the other hand, declined as a share for all groups except the lowest income, continuing a trend from the forties. The increase in the share for the lowest income group probably resulted from the introduction of the food stamp program. Food as a share usually declines as income rises and this has been true over time and among income groups. While total food declined, the share of food away from home within the food component rose from 20 to 30 percent.

There are several reasons for this shift. For one, there has been a relative increase in the number of one-person households, in which a higher than average proportion of food budgets is spent on food away from home. The development of the fast-food industry and the greater participation of married women in the labor force also contributed to the shift, which was found throughout the income distribution. With rising food prices and lower or stable real income, the total food share is not expected to change significantly.

The changing demographic characteristics of the population affect the overall averages even if consumption patterns do not change. Life cycle differences are clearly reflected in the data by age group. The share of the consumption dollar of the over 65 age group is much higher for food, housing, and medical care and lower for clothing, durables and transportation than for the younger age groups. An increasing older population will influence the overall shares of these components.

Number of earners is another characteristic in which there is great current interest since the wife is now employed in more than 50 percent of husband-wife families. We undertook some limited analysis of those components which are generally perceived to be the ones which are influenced more by earner status of the wife than by other demographic characteristics.⁴ These are food away from home, female clothing, domestic and household services, and expenses related to the automobile--car purchase, gasoline and other vehicle operating costs. We looked specifically at husband-wife families where only the husband is an earner and families where both the husband and the wife are earners.

When the families are taken as a whole, the differences in expenditures for these components are significantly higher for the two earner family than for the one-earner family. However, when income is held constant, these differences tend to diminish. These results seem to indicate that it is not the employment or nonemployment of the wife that per se accounts for differences in expenditures but rather the interaction between earner status and the contribution to income of the second earner. Similar results for purchases of durables have been found by other investigators.⁵

Even when the data are examined for particular groups, they still represent averages and individual households will differ from these averages depending upon individual circumstances. Any comparison between the averages and an individual household would have to take account of these variations which may be attributable for example, to differences in location, homeowner status number of earners, or number of children.

The Bureau of Labor Statistics publishes another data series which reflects a hypothetical urban family budget rather than actual expenditures. These budgets, for a 4-person family and a retired couple, were constructed originally to represent a modest but adequate level of living. In 1967, a lower and higher budget were added to the intermediate level.⁶ The basis for determining the content of the budgets consisted of a combination of the judgment of experts and statistical analysis of actual expenditures of these 2 family types. The market baskets have not been revised since 1967 but the costs are updated each year by components of the consumer price index. For the urban 4 person family, the total cost of the intermediate budget in autumn 1980 was \$23,134. Estimates are also made for 29 metropolitan areas and 4 non-metropolitan groups. The costs for these at the intermediate level range from \$19,769 for non-metropolitan areas in the South to \$29,682 in Anchorage, Alaska.

These budgets do not say what families should do but are estimates of the amount of income require to buy the basket of goods and services specified and pay the necessary taxes on that income. It is obvious that at the estimated levels, a different mix of components could be purchased that would be considered equally adequate by many families.

In line with past revisions of the family budget program, the BLS feels that a comprehensive revision of the program is necessary. A committee of experts appointed at the request of the Commissioner of Labor Statistics, has completed an in depth study of the family budget methodology and has recommended a completely new approach.⁷ The majority of the committee concluded that "the main claimed advantage of lists of qualities of goods and services--that such lists assure the meeting of authoritatively established needs--was in fact illusory. Any cost total derived from lists of commodities has

performance been based on a myriad of individual judgments. Consequently, the committee majority, recognizing that a judgment based on individual values and not on scientific requirements must be made at some stage whatever the method used, decided to exercise that judgment in the choice of an expenditure total rather than in several hundred item choices "

The Committee recommended that four budget standards be developed with the basic one, called the Prevailing Family Standard, set at the median expenditure of two-parent families with two children. The other three standards are determined in fixed proportion to this basic standard. The data would be derived from the Continuing Consumer Expenditure Survey.

To satisfy the need for geographic comparisons, the committee recommended the development of an interarea price index. In addition, the committee recommended that experimental work be undertaken to elicit directly from people their conceptions of living standards. A question to test the feasibility of deriving a consensus as to adequacy of income has been added to the interview questionnaire to be introduced in 1982.

The Committee Report, with the dissent of the Committee member representing Labor, has been reviewed by the BLS staff as well as by a large number of persons outside the BLS. However, it is unlikely that additional resources will be provided to revise the program in view of the present government budget environment. The future of the program is now under review.

We hope that the continuing data base to be available from the Consumer Expenditure Survey will lead to extensive research and analysis of consumer behavior. This expanded data base, combined with such standards as users may develop, can then be used to assess the needs and welfare of American families.

Footnotes

¹See list of major publications, Monthly Labor Review, April 1979, p. 54.

²D. West, National Food Review, June 1978, pp. 26-27, 46-48.

³See description in Monthly Labor Review, December 1974, pp.16-23.

⁴Paper by E. Waldman and E. Jacobs, 1978 Proceedings of American Statistical Association, p. 41.

⁵Strober and Weenberg, Journal of Consumer Research, December 1977, pp. 141-147.

⁶Full description of method and contents of budgets in BLS Bulletin 1570-5, 1967. Also annual press releases.

⁷Summary of report and dissent in Monthly Labor Review, December 1980, p. 3.

1982 Agricultural Outlook Conference, Session #17
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For Release: November 2, 1981



The purpose of the Income Survey Development Program (ISDP) was to design a survey mechanism that would meet the need for improved data for program and policy analysis -- particularly information on cash and in-kind income, assets and debts, tax liabilities, and participation in the major government transfer programs. The ISDP examined and resolved a number of technical and operational problems that make data from existing sources unsatisfactory, and demonstrated the feasibility of implementing the proposed Survey of Income and Program Participation (SIPP).

At the time when this paper was first drafted, the funding situation of the planned 1982 Panel was ambiguous. Eight million dollars and 26 positions were included in the Administration's budget submitted to Congress, but the Department of Health and Human Services was reconsidering its priorities. Subsequently the Secretary decided to withdraw support, and work relating to the 1982 Panel has been terminated.

However, the ISDP is continuing. The 1979 Research Panel, the largest and most complex of its field tests, had a stratified national sample is sufficient to provide reliable estimates of a number of characteristics of interest to analysts. The ISDP staff are currently engaged in evaluation and analysis of the program's experience and the data it collected, together with documentation and preparation of public use tapes to assist and encourage potential users.

Data needs addressed by the ISDP

A large share of the budgets of the Department of Health and Human Services (HHS) and other agencies is spent in providing cash payments and services to persons and families on the basis of need and entitlement. The cost, impact, and fairness of these programs are a major focus of executive and legislative concern, yet the information now available is not sufficient to assess them. Many people who are eligible for benefits do not always

* The opinions expressed herein are those of the author and do not necessarily reflect the position of the Department of Health and Human Services

apply for them, while others pyramid benefits from several sources -- for example, Food Stamps, Aid to Families with Dependent Children, and Medicaid. This can lead to great disparities in the assistance received by the needy population; some target groups may not get the assistance intended for them and others receive more than was anticipated. Needs are correspondingly met imperfectly or inefficiently. Moreover, the poverty measures now used to assess need are based on annual cash income and do not take account of assets, benefits in kind, and fluctuations in income during the year. When changes in the economy, program rules, or benefit schedules are considered, these data limitations make it difficult to estimate the cost to the various levels of government and to answer policy concerns as to who will win or lose.

Administrative records do not provide enough data to resolve these issues. Statistics generated from tax and program records -- such as the Treasury Department's Statistics of Income based on tax returns, and the Summary Earnings Records based on employment covered under the Social Security Act -- contain little or no information on eligibility and the receipt of multiple benefits, and the income concepts and other critical data elements are not standardized. It is therefore necessary to rely heavily on data collected in sample surveys, matched to information from record systems when possible.

The main regular source of information on household and personal income in the United States is the March supplement to the Current Population Survey (CPS). The primary purpose of the CPS is to provide timely and accurate statistics on employment and unemployment. To accomplish this at a reasonable cost, it relies on brief interviews, usually by telephone, with whomever is living at each sample address. This design provides enough time for labor force questions and a limited number of questions on supplementary topics -- for example, annual cash income and a few major in-kind benefits. These necessarily brief questions succeed in measuring regular and easily recalled types of income, but fail (according to estimates based on administrative records) to account for between 25 and 30 percent of the income from welfare payments, almost 15 percent of Social Security benefits, and over half the income from property. Assets, taxes, and expenses used to compute eligibility and benefit amounts are not measured at all, nor are monthly and quarterly fluctuations in income. Since the questions on the March supplement are asked only of household members present at the time of interview, they omit the income of persons who have died, been institutionalized, or left the country. No account is taken of changes in household membership that may have had a major impact on the financial well-being of persons who lived together for part of the reference year.

These problems are intrinsic to the design of the CPS. The changes and additions that would be required to improve its program and income data and to add tax and asset questions would compromise the survey's continued success in carrying out its major function. Similar problems exist with the other major current surveys, designed and intended for other purposes. The data on income and related characteristics needed for program and policy analysis are difficult to collect, and they cannot be obtained as a by-product of surveys designed for other purposes.

Analysts have therefore relied heavily on special, one-time surveys with a primary focus on these program-related data, notably the Survey of Economic Opportunity (1967) and the Survey of Income and Education (1976) for more detailed income data, and the Survey of Financial Characteristics of Consumers, the most recent (1963) comprehensive measure of the distribution of asset holdings. Without the benefit of hindsight from continuing experience, these efforts did not entirely succeed in collecting the desired information, and inevitably the results have become less useful as they become more dated.

The rapid growth in transfer programs led to an increasing need for accurate information on income, assets, and program participation. In 1975 the Secretary of Health, Education, and Welfare (HHS' predecessor agency) authorized a program to develop a mechanism that would collect the desired data. This effort, called the Income Survey Development Program, was directed by the Office of the Assistant Secretary for Planning and Evaluation in HHS and was carried out jointly with the Bureau of the Census (which assisted in planning and carried out the field work) and the Social Security Administration (which administers the major cash income security programs).

The task assigned to the ISDP was to examine and resolve the technical and operational issues involved in designing and implementing a new data-collection mechanism that would obtain information in personal interviews and combine it with data drawn from administrative records. The design was intended to overcome three shortcomings in other surveys. First, analysts need information that people find difficult to recall or account for accurately. For example, it is difficult to obtain monthly detail on income received during the year, especially in the more interesting cases when it has changed significantly from month to month because of variations in beneficiary status or because of casual or intermittent earnings.

Second, it was necessary to collect the needed information without placing an unreasonable burden on the public. Detail on some 50 kinds of income received over different intervals -- weekly, monthly, quarterly -- must be collected so that estimates correspond with program rules. It is also virtually essential to have detailed data on labor-force participation, expenditures that may offset income when calculating eligibility (medical, child-care, educational, and work-related costs), household composition, health and disability status, asset holdings (both as sources of income and possible disqualification for programs with asset screens), taxes (to calculate disposable income), and the receipt of various goods and services that might be considered as income in kind.

Third, the design had to be flexible. Changes in the economy and in political priorities bring new issues into prominence and change the terms in which old issues are discussed. The design developed by the ISDP had to have a capability to focus on groups and issues of emerging interest with a relatively short lead time.

Basic design features

The ISDP met these needs and requirements by using a longitudinal panel design. Persons at sample addresses were contacted early in the calendar year and asked about their income and other characteristics for the previous few months. They were then recontacted at regular intervals (usually every three months), having been followed to new addresses if necessary, and asked additional questions to cover the intervening period. This continued until the spring of the following year, and ended with a set of questions on taxes. In this way a highly detailed record was built up for each person for the entire calendar year. The design minimized the need for sample persons to recall the details of income and other characteristics for more than a few months, and reduced the number of questions that had to be answered in each interview.

Because less time was required to update the basic information after the first interview, time was also available in later interview waves to ask questions about other topics that were either stable enough not to require quarterly updating -- marital history and pension coverage, for example -- or emerging issues of one-time interest, such as emergency energy assistance received from the special program for the winter of 1979-80. This design enabled the survey staff to devise a set of core questions on income and other eligibility determinants well in advance, insuring timely processing and rapid turn-around, while leaving

interview time to add questions on new policy issues on short notice. The stable sections have been generally referred to as "core" and the varying sections as "topical modules"; this distinction is important procedurally, as just explained, but does not mean that the items that have to be asked often are necessarily more central to the survey's purpose than the items that can be answered reliably in a single interview.

Another approach taken to solve the problems of burden and accuracy was to maximize linkage of survey responses with data in administrative record systems. Some of these systems, such as the summary earnings records maintained by SSA, contain detailed information extending over many years that would be virtually impossible to collect accurately in personal interviews.

Since Social Security Numbers (SSN's) are the identifier in most general use, a primary concern of the ISDP was to collect an accurate number for each sample person. Despite early concern that this would be a sensitive item, fewer than 3 percent of persons in the 1979 sample refused to provide this information. Validation of reported numbers and follow-up questions for non-matching cases -- an advantage permitted by the panel design -- resulted in valid SSN's for more than 95 percent of the sample cases. The ISDP also examined the feasibility of drawing samples from administrative records. These can be used to validate survey responses for methodological purposes; in addition, they can provide enough cases to examine relatively small program populations of policy interest. At various times the ISDP field tests included samples of persons receiving

- Supplemental Security Income
- Aid to Families with Dependent Children
- Old Age, Survivors, and Disability Insurance
- Basic Educational Opportunity Grants
- Unemployment Insurance
- Workers' Compensation
- Veterans' Benefits

and certain kinds of tax filers. This experience was extended to use records from the Medicare program and the 1980 Census to provide a large, representative sample of the elderly for the proposed survey.

The ISDP Field Tests

The first study conducted by the ISDP was the Site Research Test, which took place in five midwestern cities during the period October 1977 - February 1978. The sample consisted of approximately 2400 households, equally divided among a simple area probability sample

and addresses of recipients of AFDC and SSI; a few persons receiving Social Security benefits were also included. The principal purpose of the study was to test the alternate questionnaire formats and reference periods described in the next section and examine the accuracy with which income from the AFDC and SSI programs was reported. Public use tapes and a volume summarizing the results of Site Research analyses are now available.

The second study, the 1978 Research Panel, was a small-scale dry run of the proposed panel design. A national sample of some 2300 households (approximately 400 SSI recipients and 1900 area probability addresses) was interviewed quarterly between April 1978 and April 1979. In addition to the income questions, topical sections dealing with eligibility, disability, personal history, net worth, and retirement plans were developed and field-tested with this panel. Procedural tests included signed releases, distribution of record-keeping devices and net worth worksheets, and continuation of part of the sample through a second year of interviews to examine attrition.

The 1979 Research Panel was by far the largest field activity of the ISDP. It was intended to provide a realistic, large-scale dry run of the proposed survey. Because of its large, nationally representative sample, results from the 1979 Panel could be used for substantive as well as methodological analyses.

In order to provide a stable workload, necessary because of the large scale of the operation, the quarterly 1979 Panel interviews were "staggered" over each three-month period to provide approximately equal numbers each month. Table 1 shows this schedule, together with a summary of the content of each interview wave. A more detailed interview-by-interview description of the data collected is provided below.

The sample design of the 1979 Panel was also relatively complex. In order to increase the precision of estimates for the upper and lower ends of the income distribution, the majority of sample cases were selected from addresses which had been in the sample of the 1976 Survey of Income and Education (SIE). The SIE had asked for income during the previous calendar year, and cases were drawn for the 1979 Panel by oversampling addresses that reported high and low incomes. The SIE had been conducted in only 100 of the 130 Primary Sampling Units (PSUs; counties or clusters of counties) in the 1979 sample, and so simple area probability samples were drawn in the other 30 PSUs. Both samples were further updated for new construction, which could not be selected according to income.

TABLE ONE

1979 RESEARCH PANEL STAGGERED INTERVIEW DESIGN AND TIMING

Form and Content	First Rotation Group	Second Rotation Group	Third Rotation Group	
I ISDP-101A, 101B:	February			I
I Household composition;	1979	March		I
I labor force; income		1979	April	I
I profile; attitudes			1979	I
I				I
I ISDP-101: Composition,	May			I
I labor force, and income	1979	June		I
I update; assets; shelter,		1979	July	I
I medical, and work-related			1979	I
I costs; attitudes				I
I ISDP-3101: Composition,	August			I
I labor force, and income	1979	September		I
I update; work and marital		1979	October	I
I history; educ. attainment;			1979	I
I migration; attitudes				I
I ISDP-4101: Composition,	November			I
I labor force, and income	1979	December		I
I update; child care;		1979		I
I higher education;			[not used]	I
I school meals				I
I ISDP-5101: Composition,			January	I
I labor force, and income	February		1980	I
I update; pension	1980	March		I
I coverage; net worth;		1980		I
I sample coverage				I
I ISDP-6101: Annual income			April	I
I round-up; job-related	May		1980	I
I benefits; taxes; informal	1980	June		I
I assistance; WIC; emergency		1980		I
I energy assistance				I

Additional cases were drawn from recipients of SSI due to blindness or disability, and persons who had been found eligible for Basic Educational Opportunity Grants covering the 1978-79 academic year. These persons were selected by name, and followed if possible when they had moved from the administrative record address. As an additional complication, another 1500 SSI cases were added during the second and third interview waves only for the special study described below, and some 400 additional Basic Grants cases were added in the second (and later) waves to make up for losses from sample encountered during the first wave due to problems in matching postal codes to PSU boundaries.

Two smaller studies were conducted to refine procedures and test questionnaire revisions. The Special Frames Study interviewed persons drawn from various administrative record systems during July and August, 1980, in five states, both to gain further experience with problems encountered when trying to locate specific groups and to test the effectiveness of the questionnaires in collecting particular types of income. The final study, the 1981 Pretest, was conducted at several locations in Pennsylvania during May 1981 to test the performance of the final revisions of the first (income) and second (eligibility and asset) questionnaires with high and low-income households and persons receiving income from farms, self-employment, AFDC, or Veterans' Benefits.

Alternatives tested in the development program

The ISDP developed and tested a number of variations on this general design. The "standard" questionnaire format used in most interviews was person-based so that a separate form was filled out for each adult in a sample household. Extensive use was made of skip instructions and check items to assure that a probing, highly specific set of questions appropriate to each person's status and income would be asked. This procedure, though effective, required a relatively lengthy interview, and two alternatives were tested. During the first field test, the 1977-78 Site Research Test, an alternative "short form" asked half the sample a direct, non-probing set of questions on every income type of interest. As expected, this did shorten interviews somewhat, but it also reduced response accuracy and was judged to be more boring than the standard alternative. A second alternative, the form ISDP-101B, was tested with the 1979 Panel. This B form screened for different types of income by asking a single respondent about every member of the household. Again, interview time decreased slightly at the expense of reporting accuracy.

Alternative rules for selecting persons to interview were also tested. During most ISDP interviews proxy responses for absent or reluctant sample persons were accepted from other household members. This was convenient, but it was suspected that proxy responses were less accurate than self-reports. A randomly selected portion of the 1979 Panel was interviewed under rules that required self-response, except when this was impossible due to illness, prolonged absence, etc. Preliminary results indicate that these self-only rules did produce somewhat more precise reporting at the expense of more interviewer travel and increased losses due to refusals. Intermediate rules that permit proxy reporting for most items, but require personal or telephone follow-up for key questions, were being considered for the 1982 SIPP.

Two other, more specialized respondent tests were conducted during the 1979 Panel interviews. Students who were living away at school were usually treated as absent household members and interviewed by proxy. The fourth interview contained a set of items dealing with post-secondary educational enrollment and expenses. To measure how well parents can report such information when their children are away, this interview was administered twice for absent students -- by proxy at the parents' address, and in person at the school address. The other test involved leaving a drop-off form, returned later by mail, to collect information related to self-employment. Records are often kept at the place of business, or by an accountant, and cannot easily be referred to during interviews at home. It was assumed that this procedure would yield better reports of these characteristics, which are relatively difficult to measure.

A final pair of procedural experiments involved the frequency of panel interviews. Other things being equal, longer reference periods reduce the burden on persons in sample and lower the cost of collecting income, employment, and household composition data for a calendar year. Though most ISDP interviews were at 3-month intervals, a 6-month reference period was used in interviews for part of the Site Research Test sample, and half of the 1979 panel reported asset income on a regular basis. Results indicate that the benefits of reduced cost and interview time do not offset the increased problems due to less accurate recall and reporting over a longer interval.

Data collected from the 1979 Research Panel

As mentioned earlier, all the time available was needed in the first interview to build up a profile of household membership and the income sources, amounts, and labor force activity of each adult member. In subsequent interviews, this profile could be

updated more quickly and time was available to collect data on other subjects, so that each interview had a particular focus.

The second interviews, which took place during May, June, and July of 1979, were intended to collect the information needed to calculate eligibility for the major means-tested transfer programs. Particular attention was given to the needs of the Food and Nutrition Service (USDA). Congress had earlier required Agriculture to undertake a study of the assets of Food Stamps recipients and eligible nonrecipients. None of the regular ongoing surveys was well-suited to this purpose, and the limited time and funding would have made a special-purpose survey very difficult. The 1979 Research Panel sample was sufficiently large, and the content--income by month, assets, and countable expenditures--sufficiently close to the data needs of FNS, that it was feasible to provide the needed information with only minor changes in the planned questionnaire content and little marginal cost. The information was subsequently used to produce a report entitled Assets of Low Income Households: New Findings on Food Stamp Participants and Nonparticipants that was delivered to Congress in January, 1981. Further analysis is continuing at FNS.

The third interview wave (August-October, 1979) also had a specific program focus. As a partial update of the 1972 Survey of the Low-Income Aged and Disabled (SLIAD) the stratified probability sample was supplemented with some 2500 households containing a recipient of Supplemental Security Income (SSI) by reason of blindness or disability. For this analytic purpose (partially met by the second interview) the third wave dealt with a variety of background characteristics, including marital history, migration, educational attainment, work history, and experience with major public assistance programs.

A peculiarity of the fourth wave interviews was that they were administered to only 2/3 of the sample or somewhat complex scheduling reasons; this reconciled the decision to stagger interviews over a three month period to maintain an even workload with the desire to measure net worth as of a single fixed date (January 1, 1980) for everyone in sample. Two major topics were addressed. A set of questions of child care focused on the use and cost of specific child care arrangements and programs, the effect of child care arrangements and availability on mothers' labor force participation, and the children reached by USDA's free and reduced-price school meals program. In conjunction with the procedural experiment on parent and student reporting described above, the other major section dealt with various aspects of post-secondary education. The Department as then constituted had a substantial investment in the Basic Educational Opportunity Grant (BEOG, now Pell Grant) program, and the sample

had been supplemented with households of BEOG eligibles. Questions therefore concerned mainly the post-secondary programs that could be financed with Basic Grants, and the resources and costs that determine eligibility and size of the grant.

The primary focus of the fifth interview was to make a comprehensive measurement of the net worth of every person in sample. A considerable amount of information had already been collected in the course of asking about income that assets produce and possible eligibility of lower-income persons. However, the data base included almost nothing on liabilities and only limited information for the upper-income households that had been oversampled. In addition, a series of items dealing with pensions and other types of retirement plan was included.

The sixth and final interview was usually referred to as the "annual round-up". Timed to coincide with the period when many people pull together their records of the previous year to prepare tax returns, it was intended to collect information on the past calendar year. Partly this was to provide a check on the quarterly reporting in previous interviews, and partly it was designed to expand the data base beyond the before-tax income that had been the primary focus. To provide a more comprehensive description of the economic situation of persons and families, items were included on tax payments, job-related benefits, and payments for the support of persons living outside the household. Additional sections dealt with non-job-related benefits (including social services) provided through both the public and private sectors, and benefits received through the Women, Infants, and Children (WIC) program. Finally, questions were added to measure the impact of the emergency energy assistance programs created for the winter of 1979-80.

Availability of ISDP data

The ISDP surveys were deliberately designed to be innovative. The complex subannual longitudinal data set presents many problems of linking, editing, imputation for missing data, and construction of summary longitudinal units and statistics that have yet to be resolved. This work is now a primary concern of the ISDP.

The ISDP is addressing both methodological and substantive raised in the course of the development program. The present staff has acquired extensive hands-on experience in developing a largely successful intra-year panel design. This sort of experience tends to be lost unless the program is ongoing, and therefore a major priority is the documentation of field and design experience in

a form that will assist survey work elsewhere in the government. Moreover, the 1979 Panel data furnish the detailed monthly data on overlapping sources of income in conjunction with other characteristics that have long been lacking, and promise to be of considerable value to users with a wide variety of interests.

In 1979 the ISDP established four Survey Development Research Centers to carry on extended series of studies in the areas of imputation and nonresponse, income reporting, microsimulation modelling, and net worth on a task order basis. In addition to the work performed by these Centers, a number of in-house studies are underway. Much of this work is primarily methodological, but some substantive work has already begun. The first of a series of "SIPP Research Notes" (now retitled "ISDP Research Notes", in line with the Department's changed priorities) has presented some preliminary counts of the overlap in benefits received from five major transfer programs. This investigation was continued to give OMB a tentative assessment of the impact of the proposed elimination of the minimum benefit. FNS/USDA has completed the first phase of analyzing the data collected in 1979 for its purposes, and arrangements are being made to transfer data under suitable precautions or provide tabulations generated by the ISDP staff for users in GAO, CRO, CRS, OMB, Energy, USDA, Labor, and other parts of HHS.

Data from the various interviews are therefore becoming available in various stages of completeness. They were intended to be useful in addressing the interests of a wide variety of users, and it is the policy of the ISDP to encourage such use. Interested potential users should contact the Director to determine the availability of data that might bear on their concerns.

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OUTLOOK '82



International trade in poultry products will expand again in 1982. Rising demand around the world, together with the ability and willingness of major exporters to provide increased supplies, should mean that many countries will export or import record levels of poultry products next year. Once again poultry meat, mostly broilers, will dominate international poultry trade. Increasing trade in eggs, especially table eggs, is also expected.

Poultry Meat

Worldwide production of poultry meat in 1982 is forecast to increase about 2 percent over 1981 output, but with domestic consumption in many of the leading exporting countries likely to increase significantly less than production, export availabilities are expected to rise. In addition, demand in the major importing countries will continue to grow, so that there should be opportunities for unprecedented levels of international trade in poultry meat, especially chicken, next year.

The United States will be the world's leading single-country exporter of poultry meat again in 1982, possibly exporting between 440,000 and 470,000 tons, an increase of roughly 10-15 percent above the 1981 figure. The major U.S. markets are expected to be the Middle East, the Far East and the Caribbean. However, as in the past, U.S. poultry meat exports will probably be more widely distributed among destinations than those of its major competitors. U.S. domestic production and prices, especially of broilers, will be important in determining the level of U.S. poultry meat exports in 1982. A possibly weaker dollar overseas may provide the United States with an advantage over some of its major competitors next year.

Major Competitors

In 1982, competition among the leading exporters will become even fiercer. As in the past, our major competitor will be the European Community (EC), and among the EC countries, France in particular. Other EC members which will export substantial quantities of poultry to non-EC countries are the Netherlands, West Germany, and Denmark. The other major competitors of the United States for poultry meat export markets in 1982 will continue to be Brazil and Hungary.

The European Community

In 1982, France is expected to solidify its position as the second-leading exporter of poultry meat in the world. As in the past, almost all of the growth in French poultry meat exports will result from

increases in shipments to non-EC countries. Major destinations for French poultry meat exports, most of which are broilers, will continue to be the Middle East, especially Saudi Arabia and North Yemen, and the Soviet Union. The export segment of the French broiler industry, which produces broilers almost exclusively for non-EC destinations, may make a substantial breakthrough into the Iraqi market for the first time in 1982. Furthermore, the recently announced devaluation of the French franc is expected to provide some advantage for French exports. One of the most important variables for French exporters in 1982 may be the extent to which the new Socialist Government continues the elaborate system of government aid to the poultry export industry in the form of regional assistance to Brittany. French poultry meat exports to non-EC countries in 1982 should be between 320,000 and 350,000 tons, an increase of about 15-25 percent over 1981 non-EC exports.

Although the Netherlands has been the second- or third-largest exporter of poultry meat in the world, only a minor percentage of its exports have gone to non-EC countries. In 1982 the Netherlands should continue its emergence as the second-largest EC exporter of poultry meat to non-EC countries. It will do this by continuing to expand its non-EC exports at a faster rate than its shipments to other EC countries. Dutch exports of poultry meat to non-EC countries may reach the 100,000-ton level in 1982, with major markets likely to be the Soviet Union, Iran, and several other Middle East countries. The Dutch may export almost 30 percent of their total poultry meat exports to countries outside the EC, a much higher percentage than in past years.

West Germany is expected to export about 40,000-45,000 tons of poultry meat to non-EC countries in 1982, with its major non-EC markets once again being the Middle East and the Soviet Union. West German poultry producers have recently become more interested in exports as an outlet for surplus production. Denmark will likely continue to export 30,000-35,000 tons of poultry meat to non-EC countries in 1982. Most of these exports will probably go to the Middle East, especially to Kuwait and the United Arab Emirates. In addition, other EC countries will be exporting smaller amounts of poultry meat to non-EC destinations.

There are several factors which will have an important effect on the level of EC poultry meat exports to non-EC countries during 1982. One of these factors will be the amount of the EC export refund, or subsidy, for whole chickens. This subsidy now stands at about 7 cents per pound. Conflicting pressures within the EC concerning the high budget expenditures for export subsidies make it difficult to predict what the EC might do to the level of the chicken export subsidy next year. Another important factor in 1982 will be the effect of the U.K. ban on imports from countries which vaccinate against Newcastle disease. If this ban excludes French and Dutch poultry meat from the U.K. throughout 1982, there will be a definite danger that EC exports, particularly from France and the Netherlands, would be diverted to other markets and thus endanger existing U.S. market shares. In another matter, if the EC were to take action on removing the duty-free status of imports of non-grain feeds, as some in the Community are strongly advocating, EC poultry producers would probably face sharply higher feed costs which would require additional subsidies or some other compensation for EC exporters to remain at the same competitive level.

Brazil

Brazil has clearly emerged as the biggest competitor of the United States, other than France, for poultry meat export markets. The Brazilians have accomplished a meteoric rise in broiler exports from 1975 to the present by exporting predominantly to the Middle East. The pattern is expected to remain the same in 1982. In 1981 Brazil will probably surpass its 1980 exports by over 50 percent and reach about 260,000 tons. The rise in Brazilian poultry meat exports in 1982 is forecast to be more moderate, reaching approximately the 300,000-ton level. The primary Brazilian export markets in 1982 will probably be Saudi Arabia, Iraq, and Kuwait, and possibly will include the Soviet Union.

Several factors will be important in determining the level of Brazilian chicken exports in 1982. One of these will be the ability of the Brazilians to continue exports to the Soviet Union. Brazil first shipped chicken to the Soviets at the end of 1980, and has shipped an estimated 40,000 tons there during 1981. Another factor will be Brazil's share of the huge Iraqi tender for delivery of chicken during 1982. One more consideration for 1982 will be continuation of the export subsidy program of the Brazilian government, which presently takes the form of subsidized financing for companies which process poultry for export. Another important variable could be the ability of Brazilian broiler producers to cope with the constantly escalating feed costs which partially result from the extremely high rate of inflation in Brazil.

Hungary

The other major competitor of the United States for poultry meat markets is Hungary. In 1981 Hungary will probably export about 145,000 tons of poultry meat, and the total for 1982 should be only slightly higher, probably about 150,000 tons. In 1982 the pattern of Hungarian exports should be somewhat different than it has been in previous years, when the Hungarians sent substantial quantities not only to the Soviet Union, but also to the Middle East and Western Europe. Hungary will probably send about 100,000 tons, much higher than traditional levels, of poultry meat to the Soviet Union in 1982, and as a result will have less available for the Middle East than in previous years. The Hungarians are expected to maintain their exports of poultry meat, primarily ducks and geese, to the EC and non-EC Western Europe.

Hungary has not been able to match the tremendous expansion in poultry meat exports shown by the United States, the EC, and Brazil because of limited investment plans, concerns about foreign currency expenditures, and the need to import high-quality feed, especially soybean meal. The anticipated small overall increase in Hungarian poultry meat exports as well as the shift towards the USSR and away from the Middle East probably means that Hungary will be less of a factor in direct export competition with the United States in 1982.

Major Markets

Increasing demand for poultry meat is generally expected in all the importing countries in 1982. Once again the major markets for poultry meat imports will be the Middle East, the Far East, the Soviet Union, the Caribbean, and the EC.

The Middle East

In the Middle East, Saudi Arabia has been, and will remain in 1982, the single largest importer of poultry meat. Saudi Arabian imports of poultry meat next year will likely exceed 250,000 tons, and will probably be supplied by at least 30 countries, with France and Brazil getting by far the biggest shares. However, there may be opportunities for sizable increases in U.S. shipments of poultry meat to Saudi Arabia next year, not only due to rising demand, but also as a result of anticipated lower shipments from Hungary, and the possibility of lower available supplies from France due to French exports to Iraq and Iran.

Saudi imports are expected to increase in 1982 despite furious expansion of Saudi domestic poultry production, which is heavily subsidized by the government. Saudi production, which is almost totally dependent on imported feed, is not expected to reach a level in 1982 which would significantly slow down the demand for imports.

The pattern of Iraqi imports in 1982 will, for the most part, be determined by the awarding of the Iraqi tender which calls for 130,000 tons of chicken to be delivered from January through December of next year. The major suppliers are expected to be France, the United States, and Brazil. Special Iraqi tenders during 1982 may raise the import total above the 130,000-ton level, although an ending of the war with Iran would make this less likely.

Egypt will be the third-largest importer of poultry meat in the Middle East in 1982, probably bringing in about 90,000-100,000 tons. Although the United States is expected to continue as the major supplier, the Egyptian market is likely to become much more competitive in 1982 as Brazil and several EC countries strive for larger market shares.

Several other Middle Eastern countries will import substantial quantities of poultry meat in 1982, particularly North Yemen, the United Arab Emirates, and Kuwait. Most of this import demand will be covered by the EC, Brazil, and the United States. In 1981, Iran has emerged as another substantial importer of poultry meat in the Middle East. This will likely continue in 1982, and most Iranian imports will probably be supplied by the EC countries, particularly France and the Netherlands.

The Soviet Union

Over the last 3 years the Soviet Union has become one of the world's 3 largest importers of poultry meat, and it should remain so in 1982. The continuing stagnation of overall Soviet meat production, despite increases in poultry output, makes it likely that the Soviets will import at least 200,000 tons of poultry meat in 1982, an increase of about 25 percent above the 1980 record level of poultry meat imports. Hungary will be the primary supplier by far, but substantial quantities should also come from several EC countries, particularly France, the Netherlands, and West Germany. Brazil may continue as a significant supplier of the Soviets in 1982. There could be opportunities for the United States to return to the Soviet market next year, especially if large increases in EC and Brazilian exports to the Middle East force the Soviets to look for other suppliers.

The Far East

In 1982 the Far East will continue to be one of the leading areas for poultry meat imports, and Japan will probably be the single largest importer. Increasing Japanese consumer preference for less expensive imported chicken and the likelihood of limited domestic production increases could mean that Japan will import 100,000 tons of poultry meat in 1982, an increase of about 40 percent over the Japanese import level for 1980. The United States will be the dominant supplier of Japan again next year, and the other major suppliers will probably be the People's Republic of China (PRC) and Thailand.

Hong Kong will be another large importer of poultry meat in the Far East in 1982. Increasing consumer demand together with a leveling off of poultry production may result in a poultry meat import total of 75,000-85,000 tons next year. The United States and the PRC should account for all but a relatively small percentage of Hong Kong poultry meat imports in 1982.

Singapore will also import substantial quantities of poultry meat in 1982, perhaps reaching the 25,000-ton level. The United States is expected to be the primary supplier.

Two variables that could affect the pattern of poultry meat trade in the Far East during 1982 would be large increases in exports from the PRC, and possible diversion of EC exports to the Far East due to the U.K. Newcastle ban on poultry imports.

Other Major Markets

The EC should be a substantial importer of poultry meat from outside the EC again in 1982. The largest importer of poultry meat in the world is actually West Germany, but most of its imports come from other EC countries, particularly the Netherlands. In 1982 West Germany is expected to import about 50,000 tons of poultry meat from outside the EC, out of an EC import total of about 65,000-70,000 tons. Most EC imports will come from the United States, Hungary, and other East European countries. The most critical factor affecting EC imports could be a redirecting of French and Dutch exports from the U.K. market to other EC markets, particularly West Germany, as a result of the U.K. Newcastle ban.

The Caribbean area will remain a substantial importer of poultry meat in 1982, probably importing about 80,000-90,000 tons, with the United States again being the dominant supplier. The largest U.S. markets there should be Jamaica and the Leeward-Windward Islands, while France may ship some quantities to Cuba.

Venezuela is expected to be a substantial importer of poultry meat in 1982, and will probably import about 20,000-25,000 tons. Because of Venezuelan familiarity with U.S. poultry products as well as the proximity of the market, the United States should continue to face almost no competition for the poultry meat import market in Venezuela next year.

Canada, which uses an import quota tied to its domestic production of poultry meat, will probably import about 25,000-30,000 tons of poultry meat in 1982, all of it from the United States. The relative levels of U.S. and

Canadian prices will be an important factor. An expected significant increase in Mexican broiler product on may limit poultry meat imports by Mexico next year to about 15,000-17,000 tons, almost all of which should come from the United States.

Turkey Meat

In 1982, as in recent years, there will probably be only 4 countries which export significant quantities of turkey meat. The United States is expected to be the leading exporter, followed by France, the Netherlands, and Israel. However, almost all of the French and Dutch exports will go to other EC countries. U.S. exports will be distributed among numerous countries, although the United States may have problems with its two major markets, Egypt and West Germany, in 1982. U.S. turkey exports to these two countries during 1981 were below the year-earlier levels as of September 1. In addition, the U.K. Newcastle ban on poultry imports, which went into effect on that date, raises the possibility that France and the Netherlands will increase turkey shipments to established U.S. markets, especially West Germany and Egypt, during 1982. Israel will probably export 10,000-12,000 tons of turkey in 1982, a large part of which will go to the EC.

Eggs

The recent boom in international trade in table eggs is likely to continue in 1982. The two leading exporters, disregarding intra-EC trade, will once again be the United States and the Netherlands. The major U.S. markets probably will be Iraq, Hong Kong, the United Arab Emirates, Egypt and Saudi Arabia. For the Netherlands, receiving the EC export subsidy which is currently about 10 cents per dozen eggs, the major non-EC markets will likely be Iran and Algeria. The outcome of the Iraqi tender for one billion table eggs, with delivery beginning in April 1982, will play a large role in determining the pattern of table egg trade next year. In addition, the U.K. Newcastle ban may encourage increased Dutch table egg exports to non-EC countries in 1982, already the trend this year before the ban was imposed.

For egg products, prospects appear favorable for continuing increases in U.S. shipments to Japan in 1982. The Japanese layer flock and egg production are not expected to increase next year, and the United States may continue to increase its share of the Japanese market, as well as the total quantities shipped.

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Poultry and egg producers can look forward to lower feed costs in 1982, with poultry and egg prices averaging above this year. However, prices are expected to be weak in the first half of 1982, as consumer budgets continue tight and other high protein food supplies remain large. Prices will likely increase in the second half of 1982 if consumers are "better off" and spend more freely. Retail prices can be expected to increase slowly as marketing cost increases are passed along to consumers.

Factors Affecting the Poultry Industries

Feed Costs

Feed costs now through July 1982 should be lower than a year earlier. The corn crop for the 1981/82 marketing year is forecast at 8.08 billion bushels, up 22 percent from last year. As a result, prices have declined. The farm price of corn during the 1981/82 marketing year is forecast to average \$2.60 to \$2.90 per bushel, down from \$3.10 per bushel in 1980/81. The soybean crop is also forecast to be much improved over last year. The price of 44 percent protein soybean meal at Decatur for the marketing year beginning October 1, 1981 is forecast to average \$170 to \$195 per ton, down from \$218.20 per ton in 1980/81.

The Economy

Revised data indicate the economy failed to grow in second-quarter 1981. Preliminary data suggest the economy also declined in the third quarter and that the U.S. is in a recession. As a result, consumer spending has been reduced, especially for durable goods (housing and automobile). Current forecasts are for continued weakness in the economy through the first half of 1982, with some pick-up in the second half when the next tax cut increases savings and consumption.

The slack economy should keep consumers budget-conscious and help the relatively low-priced poultry products. However, consumers' tight budgets will likely limit price gains, especially through the first half of 1982.

Broilers

Broiler producers continue to endure an unusually long period of unfavorable returns. Except for third-quarter 1980, negative returns have persisted since second-quarter 1979. However, returns for some firms in third-quarter

1980 were helped by reduced production from both planned adjustments and unplanned heat losses of birds. Estimated net returns have been negative throughout 1981 for commodity birds. However, producers supplying branded birds and cut-up chickens may be nearer break-even.

Likely anticipating reduced supplies of pork, broiler producers increased output during 1981. The industry was hampered in expansion plans because hatchery supply flocks had been reduced by the hot weather in 1980. However, by culling fewer old hens and by setting eggs smaller than those normally used, the industry was able to expand output in the first quarter of 1981 by 3 percent. Production increased 5 percent in the second quarter. Chicks placed for third-quarter broiler production suggested initially that the third quarter would see about a 5 percent increase over year-earlier levels. However, broiler losses last year and heavier-weight birds this year have pushed production about 11 percent above last year. Output in the fourth quarter is expected to increase about 4 percent based on chicks placed for October and November slaughter and eggs set for December production.

Although the actual inventory of hens in the hatchery supply flock is unknown, the cumulative pullet chick placements 7 to 14 months earlier, plus current heavy-type mature chicken slaughter, show potential availability of hatching eggs for broiler production. For every month except March and September--only partial data available--heavy-type mature chicken slaughter has been less than the number of chicks placed in hatchery supply flocks. In April, producers reduced the steady month-to-month rise in pullet replacements that had begun in September 1980. As a result, the hatchery supply flock on a cumulative basis will peak in November 1981 and decline through March.

The hatchery supply flock placements provide an indication of expansion or contraction in future broiler production. These placements suggest a leveling off in production for 1982, especially since placements have been about the same in 3 of the last 4 months. However, producers needn't set all available eggs; for example, cumulative placements in third quarter 1981 were 11 percent greater than a year earlier but egg sets were only up about 3 percent in the 19 weekly reporting States. Cumulative placements will be up 15 percent in fourth-quarter 1981 and 6 percent in first-quarter 1982.

1982 Production

Broiler producers can expect more favorable feed prices, since current crop prospects are much more favorable than they were last year. However, costs other than feed are likely to continue to rise--offsetting some of the decline in feed costs.

The improving cost prospects and stabilization of the hatchery supply flock suggest producers are planning about a 1-percent expansion for 1982. Broiler output in the first and second quarters may expand about 1 percent above 1981, especially if reduced pork production results in prices above current low levels. Broiler production in the third quarter is usually near second-quarter levels. If pork producers farrow near the same number of sows in the spring, which would hold pork output near year-earlier levels in the fall, broiler producers may hold production near October-December 1981 levels in fourth-quarter 1982.

1982 Prices

Broiler prices in 1982 are expected to strengthen slightly from 1981 levels. The 9-city weighted average wholesale broiler prices in the first half of 1982 may be slightly weaker than this year. But, the expanding economy in the second half of 1982, stimulated by the tax cuts, may strengthen prices--especially if broiler production slows in the second half.

Competing meat supplies during 1982 should continue to be slightly below last year, with pork down possibly 3 to 5 percent but beef up 2 to 4 percent.

Eggs

Preliminary cost estimates suggest egg producers have had unfavorable returns during most of 1981. Egg prices have generally been above 1980 levels but costs have increased through most of the year. Feed costs, especially, have risen because of the short crop last year. This year's unfavorable returns situation follows unfavorable returns in the first three quarters of 1980.

As a result of these losses, producers, since the beginning of 1980, have been reducing the number of replacement pullets added to the flocks. During 1980, the number of egg-type chicks hatched was down 7 percent from 1979. Through September, egg-type chick hatch was 9 percent below January-September 1980 and 16 percent below 1979. This indicates that the average age of the flock is increasing.

To offset the decline in replacement pullets, egg producers have been keeping their hens in production longer. One indication of this is the percentage of the flock that has been force molted. Force molting gives hens a rest from laying, so that when they start laying again, they are more productive than before their rest. During 1980, the percentage of the flock that had been force molted was lowest during May, at 11.8 percent. The percentage then increased during the remainder of the year. On January 1, 1981, 18 percent of the flock had been force molted. The percentage then declined to a low of 14.9 percent in June, with increases since then.

While the percentage of the laying flock with molt complete has been record high in 1981, the national percentages are still low compared to those in California, Oregon, and Washington. In these three States, the proportion of the flock with molt complete is near one-third of the hens. If the other States would force molt their hens as these Western States, egg output could be increased fairly rapidly even without additional replacement pullets.

Egg Production

Egg production in the third quarter of 1981 was 1,430 million dozen, the same as last year. With fewer replacement pullets and slaughter of laying hens near last year's level, egg production in the fourth quarter may be 1 percent below the 1,483 million dozen produced in 1980.

Production may continue to trail year-earlier levels in the first half of 1982. The egg-type chick hatch was 13 percent below 1980 in August of this year and 14 percent below in September. In addition, the 1980 hatch

was below the 1979 level. In the first quarter of 1982, replacement pullets will even be below the reduced levels of this year. Producers should be encouraged to continue holding their old hens longer because the decline in feed costs should help improve profitability. The rate of lay would likely be lower, reducing output gains. Egg production for all of 1982 is likely to be level with 1981 or down 2 percent.

Prices Rise

The price of Grade A large cartoned eggs in New York in the third quarter of 1981 was 71 cents per dozen. Egg prices usually strengthen seasonally in the fourth quarter, when more eggs are used in holiday baking. Egg prices in the fourth quarter may average 75 to 78 cents--near the 77 cents of last year.

If producers reduce output in the first half of 1982, egg prices may average 73 to 75 cents per dozen, up from the 70 cents of this year. Egg prices in the second half of 1982 are expected to average 76 to 78 cents per dozen as the economy improves and demand increases for high protein foods.

Turkey

Reduced supplies of turkeys in the summer of 1980 resulted in favorable returns during the second half of that year and encouraged turkey producers to increase hatchery activity for early 1981 production. Returns then weakened because of high feed costs, and hatchery activity slowed during the first 4 months of 1981. Hatchery activity improved as returns improved during May, June, and July, although poults hatched in July were down slightly from a year earlier.

The turkey industry ended 1980 with stocks of frozen turkeys at a relatively low level. The industry began building stocks early this year, because economy had been expected to improve in the second half of the year. As a result, stocks of frozen turkeys are at a record level now and are depressing prices.

Production

Turkey production in the first three quarters of 1981 was 6 percent more than in the same period of 1980. However, per capita consumption during January - August 1981 was 8 percent less than in 1980. Production in the fourth quarter is expected to be 4 percent larger than in 1980. In order for the turkey industry to reduce stocks to manageable levels, a record large consumption of turkey would be necessary in the fourth quarter. While not impossible, such a large level of turkey consumption may not occur even at severely depressed prices, and so, stocks are expected to remain high at the beginning of the year.

If stocks do continue large into the first quarter, turkey prices will likely be depressed during the first half of the year. Even with much lower feed prices, producers could expect unfavorable returns and would likely reduce hatchery activity.

Thus, turkey production is expected to decline in 1982, possibly by 4 to 6 percent. In September, turkey producers reported that they intended to be holding 5 percent fewer hens on December 1 than they were holding on December 1, 1980. However, heavy breed turkey hen intentions were only down 3 percent, and light breed hens were down 42 percent.

Turkey production may be down about 3 percent in the first half of 1982, and then decline about 7 percent in the second half of the year. Turkey poults already hatched should increase production in January and February, but March will be lower than a year earlier.

Prices

The price of 8-16 pound young hen turkeys in New York averaged 63 cents per pound in the third quarter of 1981--down from 68 cents last year. Prices usually strengthen seasonally in the fourth quarter, but plentiful supplies of frozen turkeys are limiting prices. As a result, the price of young hens in the fourth quarter may average 55-57 cents, down from 73 cents last year.

Prices usually decline after the holidays, when demand declines seasonally. In addition, stocks carried over will need to be sold to maintain quality in the first half and may depress prices. Prices of young hens may average 53 to 57 cents during the first half of 1982, down from 62 cents this year. If turkey production is down as expected, cold storage stocks will likely be much lower than this year and help support prices in the second half of 1982. As the economy picks up, turkey prices may average 67 to 71 cents per pound in the second half of 1982.

Retail Prices

The retail price for eggs, as measured by the Bureau of Labor Statistics (BLS) Index, is expected to increase in the fourth quarter and during most of 1982. Compared with a year earlier, the index may be 1 percent higher in the fourth quarter and 3 to 5 percent higher in the first half of 1982.

With broiler and turkey prices declining in the fourth quarter, the poultry price index may decline about 2 percent from fourth-quarter 1980. In the first half of 1982, the index may be the same to up 2 percent, much below the expected gain of 6 to 10 percent in the red meat price index. In the second half of 1982, the poultry price index may increase 5 to 8 percent from 1981 levels, about the same as the increase in the red meat index. For the year, retail poultry prices may be up 3 to 5 percent from 1981 levels.

POULTRY & EGG OUTLOOK

LEE CAMPBELL, PRESIDENT
POULTRY AND EGG INSTITUTE OF AMERICA

1982 AGRICULTURAL OUTLOOK CONFERENCE, SESSION #18
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AS I THOUGHT ABOUT WHAT I WAS GOING TO SAY HERE TODAY IN ADDITION TO COMMENTING ON ALLEN BAKER'S AND JIM GRUFF'S REMARKS, I REVIEWED WHAT I SAID THREE YEARS AGO WHEN I WAS ON THIS PANEL LAST. IN SOME WAYS IT IS INTERESTING, IN OTHER WAYS DISHEARTENING.

IN 1978, I SAID THAT I HAD FOUND A GENERAL ATTITUDE OF SOME OPTIMISM. PROSPECTS POINTED TO FAVORABLE CONDITIONS IN 1979 FOR POULTRY AS FAR AS PRICE, SUPPLY AND DEMAND WERE CONCERNED. EGG PRODUCERS' RETURNS WERE EXPECTED TO CONTINUE TO IMPROVE IN 1979 IF OUTPUT SHOWED LITTLE EXPANSION.

THE INTEREST RATE OUTLOOK IN 1978 WAS OF DEEP CONCERN TO INDUSTRY. AND GET THIS -- MOST OF THOSE I TALKED WITH WERE PREDICTING A $12\frac{1}{2}$ % RATE BEFORE IT STARTED DOWN. THAT WAS AN EFFECTIVE CURB ON BORROWING PLANS. I QUESTIONED, THEN, HOW MUCH THIS WOULD DISCOURAGE EXPANSION IN FOOD AND AGRICULTURE. WE KNOW HOW HIGH THE PRIME RATE HAS GONE SINCE THAT TIME. BUT THAT DOESN'T TELL THE WHOLE STORY. EXAMPLE -- I TALKED WITH ONE LARGE EGG PRODUCER THIS PAST YEAR WHO SHOWED ME HIS LINE OF CREDIT -- WITH PART OF IT AT A REAL INTEREST RATE OF 27.22%.

NOW HERE WE ARE IN 1981. ALL OF OUR INDUSTRY'S COMMODITIES HAVE BEEN IN A LOSS POSITION. AGRICULTURE IN GENERAL HAS. WE ARE TOLD THAT THE 1980'S HOLD PROMISE FOR U.S. AGRIBUSINESS. CATTLE, HOG AND POULTRY CYCLES WILL CONTINUE, ONE GROUP OF ECONOMISTS SAYS, BUT THEY WON'T BE AS VOLATILE AS IN THE 70'S. ANOTHER LEADING ECONOMIST SAYS THE VOLATILITY OF COMMODITY PRICES, ENERGY AND INTEREST RATES WILL CONTINUE TO INCREASE.

THERE IS NO QUESTION, IN MY MIND, THAT IT BECOMES MORE AND MORE DIFFICULT FOR BUSINESS MEN TO PLAN. HOW WILL INTEREST RATES BEHAVE IN THE NEXT YEAR? WHY HAS THE DOLLAR APPRECIATED 30% AGAINST SOME EUROPEAN CURRENCIES IN THE PAST YEAR? WILL LOWER MARGINAL TAX RATES RAISE OR REDUCE REVENUE?

ON THESE AND OTHER KEY ISSUES, THE OPINIONS OF ECONOMISTS ARE SPREAD AS WIDELY AS FORECASTS OF NEXT MONTHS WEATHER.

CHARLES WOLF, JR., DEAN OF THE RAND CORP.'S GRADUATE INSTITUTE, WRITING IN NEWSWEEK, SAID ONE CONSEQUENCE OF THE BABBLE OF PROPHECY "IS THAT THE REPUTE OF ECONOMICS AND ITS PRACTITIONERS HAS FALLEN TO ONE OF ITS LOWEST POINTS IN THE 200 YEARS SINCE PUBLICATION OF THE 'WEALTH OF NATIONS'."

WOLF WENT ON TO POINT OUT THAT HE HAD THE OCCASION TO CONSULT CONSECUTIVELY THREE ORTHOPEDIC SURGEONS ABOUT A LIGAMENT INJURY. ONE RECOMMENDED IMMEDIATE SURGERY. ONE SUGGESTED A CAST FOR SIX WEEKS AND THEN MAYBE SURGERY. THE THIRD PROPOSED REST AND REHABILITATION.

"PERHAP", HE SAID, "ECONOMICS DOESN'T LOOK SO BAD IF

IT'S COMPARED TO MEDICINE. WHETHER THIS SHOULD BE VIEWED AS GROUND FOR SOLACE OR GRIEF IS ANOTHER QUESTION", HE ADDED.

LET ME MAKE JUST A FEW COMMENTS ABOUT OUR MAJOR COMMODITIES AND THEN GET BACK TO SOME OTHER AREAS THAT BEAR ON OUR INDUSTRY, INCLUDING EXPORTS.

I THINK INDUSTRY WOULD AGREE IMMEDIATELY WITH ALLEN BAKER'S COMMENT THAT THOUGH MORE FAVORABLE FEED PRICES ARE EXPECTED, OTHER COSTS ARE LIKELY TO CONTINUE TO RISE. COMPETING MEAT SUPPLIES ARE PREDICTED SLIGHTLY LOWER NEXT YEAR, PORK DOWN 3-5%. BUT HOW LOW WILL CORN BE WHEN FARMERS DECIDE ITS BETTER TO FEED IT TO HOGS THAN SELL IT? AND WHAT WILL THAT DO TO PORK SUPPLIES?

IT HAS OFTEN BEEN SAID THAT THE POULTRY INDUSTRY DOES BETTER DURING HIGH GRAIN PRICES.

THIS FALL WE ARE EXPERIENCING LARGE AMOUNTS OF POULTRY COMING TO MARKET -- PERHAPS TOTALLY THE LARGEST EVER. STORAGE FACILITIES ARE PACKED. CONDITIONS ARE NOT GOING TO GET BETTER, INDUSTRY SOURCES BELIEVE, FOR AT LEAST SIX MONTHS WHEN IT COMES TO POULTRY.

CONDITIONS LOOK A LITTLE BETTER FOR EGGS. BUT TOO RAPID A PRICE ADVANCE WORKS TO INDUSTRY DISADVANTAGE.

THE TURKEY INDUSTRY, I'M AFRAID, AGREES WITH BAKER'S CONCERN THAT THE LARGE LEVEL OF TURKEY CONSUMPTION NEEDED BEFORE YEAR'S END JUST WILL NOT OCCUR EVEN AT SEVERELY DEPRESSED PRICES ENOUGH TO RELIEVE THE HIGH STORAGE STOCKS. AND THOSE STOCKS WILL DEPRESS PRICES IN 1982. RIGHT NOW, THE NATIONAL TURKEY FEDERATION IS PLANNING A MARKETING PROGRAM TO

BE PUT IN ACTION EARLY IN 1982.

SO THE 1980'S HAVE STARTED OUT AS AN AGE OF ANXIETY AND UNCERTAINTY. DR. RAY GOLDBERG, OF HARVARD UNIVERSITY, POINT-ED OUT AT OUR ANNUAL FACT FINDING CONFERENCE IN SEPTEMBER THAT THE FEWER-AND-LARGER TREND WILL CONTINUE. BY THE YEAR 2000, HE PREDICTS THAT 50,000 FARMERS WILL ACCOUNT FOR 66% OF AGRICULTURAL PRODUCTION COMPARED WITH 100,000 TODAY WHO ACCOUNT FOR 50% OF PRODUCTION. FINANCIAL RESOURCES IN BAD YEARS HAVE BECOME ESSENTIAL TO AVOID BANKRUPTCY. THE IDEA THAT BAD YEARS CAN BE SURVIVED BY BORROWING AGAINST FUTURE GOOD YEARS "HAS BEEN MADE A SHAMBLES OF" GOLBERG SAID.

EXPORTS

THE ONE BRIGHT SPOT ON OUR HORIZON TODAY, IN SPITE OF PROBLEMS, IS THE EXPORT MARKET. THIS YEAR SHOULD BE ANOTHER RECORD YEAR FOR US. AND YOU HEARD JIM GRUFF PREDICTING ANOTHER 10-15% INCREASE NEXT YEAR. THAT PREDICTION SEEMS REASONABLE TO ME - IF THINGS CONTINUE AS THEY ARE TODAY AND I'LL GET INTO THAT SHORTLY.

WHEN THE POULTRY AND EGG INSTITUTE, IN COOPERATION WITH USDA'S FOREIGN AGRICULTURAL SERVICE FIRST BEGAN DEVELOPING MARKETS ABROAD THROUGH ITS INTERNATIONAL TRADE DEVELOPMENT BOARD OVER TWENTY YEARS AGO, EXPORT SALES OF U.S. POULTRY AND EGGS WERE VIRTUALLY NON-EXISTENT.

ADVERSE ELEMENTS STILL EXIST IN THE INTERNATIONAL MARKETING OF POULTRY AND EGGS. THESE ELEMENTS MAY BE LIMITED

ACCESS TO MARKETS OR SUBSIDIES PAID BY OUR COMPETITOR COUNTRIES. U.S. EXPORTERS, WITH THE HELP OF PEIA AND FAS, HOWEVER, MANY TIMES HAVE COMPENSATED FOR IMPORT RESTRICTIONS AND SUBSIDIES BY SEEKING OUT AND DEVELOPING NEW EXPORT MARKETS AND INTRODUCING NEW PRODUCTS INTO ESTABLISHED MARKETS. THAT'S WHY WE HAVE BEEN ABLE TO SET RECORDS IN SPITE OF BARRIERS.

THE FACTS ARE THAT WHEN FAIR ACCESS IS ACCORDED U.S. POULTRY AND EGGS IT HAS BEEN DEMONSTRATED THAT WE CAN COMPETE ANYWHERE IN THE WORLD.

IN 1978, AT THIS SESSION, I POINTED OUT THAT FOR BROILERS A FACTOR IN EXPORTS WAS THE FACT THAT THE FORMER NATIONAL BROILER MARKETING ASSOCIATION WAS ABLE TO BID ON LARGE ORDERS. WITH NBMA NO LONGER IN EXISTENCE I SAID WE NEEDED SOMETHING TO REPLACE THAT ABILITY TO SHIP LARGE ORDERS -- A WEBB POMERENE CORPORATION, PERHAPS.

SINCE THEN, TWO SUCH CORPORATIONS HAVE BEEN FORMED, AND FOR EGGS, A PRODUCERS COOPERATIVE HAS BEEN PUTTING TOGETHER LARGE ORDERS FOR EXPORTS. AND MORE AND MORE FIRMS ARE MAKING EXPORT MARKETING A PART OF THEIR TOTAL MARKETING PROGRAM.

GRUFF DISCUSSED SEVERAL FACTORS THAT HAVE HAD AND WILL HAVE AN EFFECT ON EXPORTS. ONE IS THE SUBSIDY PAID BY THE EUROPEAN COMMUNITY (EC).

IN 1978, I SAID THE POULTRY AND EGG INDUSTRY WAS WATCHING WITH ANTICIPATION THE THEN CURRENT MULTILATERAL TRADE NEGOTIATIONS IN GENEVA. UNFORTUNATELY WE GOT LITTLE

FROM THOSE NEGOTIATIONS. NOTHING WAS DONE ABOUT THE HIGHLY PROTECTIONIST EC COMMON AGRICULTURAL POLICY WITH ITS NON-TARIFF BARRIERS THAT CAN SO SUCCESSFULLY CONTROL THE FLOW OF POULTRY AND EGGS INTO THE E.C.

IN ADDITION, WE HAVE HAD TO FACE UP TO A VARIETY OF HEALTH REGULATIONS, PARTICULARLY IN THE FEDERAL REPUBLIC OF GERMANY AND THE UNITED KINGDOM. THE LATEST - THE U.K. BAN ON IMPORTS FROM COUNTRIES THAT VACCINATE FOR NEWCASTLE DISEASE.

BUT ONE THING DID EMERGE FROM THE MTN -- A SUBSIDIES CODE. AND THE U.S. POULTRY INDUSTRY HAS SET OUT TO TEST THAT. THE NATIONAL BROILER COUNCIL, THE POULTRY AND EGG INSTITUTE AND A NUMBER OF STATE POULTRY AND EGG ASSOCIATION HAVE FILED A PETITION UNDER SECTION 301 OF THE TRADE ACT, SEEKING HELP FROM THE PRESIDENT IN GETTING RELIEF FROM THE EC SUBSIDIES THAT PROVIDE UNFAIR COMPETITION FOR THE EC IN MARKETS AROUND THE WORLD. THE U.S. TRADE REPRESENTATIVE HAS AGREED TO ACCEPT THE PETITION. NOW WE WILL SEE HOW OUR GOVERNMENT WILL WORK TO SEEK THE REMOVAL OF THESE UNFAIR TRADE METHODS. DEPENDING UPON THE ACTION TAKEN, JIM GRUFF'S PREDICTIONS FOR THE FUTURE OF EXPORTS MAY BE LOW... EVEN FOR 1982.

THIS ADMINISTRATION IS ON RECORD IN ITS PROTEST AGAINST SUBSIDIES AND ITS INTEREST IN AGRICULTURAL EXPORTS ESPECIALLY OF ADDED-VALUE PRODUCTS. NOW WE NEED THIS INTEREST TO BE PUT INTO ACTION. WE NEED FORCEFUL EFFORTS TO COMBAT SUBSI-

DIES! WE NEED POLICY AND MARKET DEVELOPMENT TO PUSH ADDED VALUE PRODUCTS FROM THE POULTRY AND EGG INDUSTRY!

ON THE DOMESTIC SIDE, OUR INDUSTRY LOOKS WITH FAVOR ON MANY OF THE CHANGES THAT ARE BEING MADE BY THE ADMINISTRATION -- LESS REGULATION, INNOVATION IN INSPECTION PROCEDURES, MORE EFFICIENCY IN GOVERNMENT, POSSIBLY MORE ENLIGHTENED LEGISLATION ON FOOD SAFETY.

IN 1978, I LISTED SOME CONCERNS OF THE POULTRY AND EGG INDUSTRY. LUCKILY SOME OF THOSE ARE NO LONGER WITH US, OTHERS ARE GROWING. UNION ORGANIZATION EFFORTS, FOR EXAMPLE, DOMINATE MORE AND MORE THE TIME OF MANAGEMENT. NUTRITION AND LABELING ISSUES CONTINUE. ANIMAL WELFARE ISSUES CONFRONT US. AND SO ON... AND SO ON.

THROUGH ALL OF THIS, HOWEVER, THE UTMOST MATTER BEFORE OUR INDUSTRY IS THE SCIENCE OF MARKETING... MARKETING AT A PROFIT. IN MANY WAYS, AS WE LOOK TO THE FUTURE, THE POULTRY AND EGG INDUSTRY HAS A LOT GOING FOR IT -- BUT IF WE CAN'T MAKE A PROFIT WHILE CAPITALIZING ON THESE OPPORTUNITIES, IT IS ALL FOR NAUGHT!

MOST SOCIOLOGISTS SAY THAT THERE WILL BE TREMENDOUS CHANGES IN LIFESTYLES, ATTITUDES AND BUYING POWER OF THE POPULATION AT LARGE IN THE NEXT TWENTY YEARS. IN A SIX YEAR PERIOD FROM 1970 TO 1976, WE HAVE SEEN A 15% INCREASE IN THE NUMBER OF TOTAL HOUSEHOLDS, YET THERE HAS BEEN A 41% INCREASE IN ONE PERSON HOUSEHOLDS, A 156% INCREASE IN MEN UNDER 35 LIVING ALONE AND A 110% INCREASE IN WOMEN UNDER 35 LIVING

ALONE. ACCORDING TO A RECENT REPORT ON "MARKETING IN THE 80'S" PREPARED BY EDWARD L. NINER OF WARNER AMEX, ATARI, INC., THE COMING DECADE WILL SEE THE TYPICAL FAMILY AS ONE WITH TWO INCOMES AND FEWER CHILDREN. OVER ONE THIRD OF THE "TYPICAL" FAMILIES OF THE 1980'S WILL HAVE FAMILY INCOMES OVER \$25,000. THIS TREND MEANS THAT INDIVIDUAL FAMILIES WILL HAVE MORE TO SPEND AND FEWER MOUTHS TO FEED - THEY WILL DEMAND MORE SPECIALTY PRODUCTS AND SERVICES AND MORE QUALITY SO THAT WHAT THEY BUY SATISFIES THEM. ONE OF THE MOST IMPORTANT CHANGES IS THAT PEOPLE WILL BEGIN TO CONSIDER TIME AS THEIR MOST VALUABLE RESOURCE AND THEY WILL LOOK FOR WAYS TO USE THEIR TIME CAREFULLY.

THERE IS A CONTINUING TENDENCY AMONG AMERICANS TO CONSIDER EATING OUT AT RESTAURANTS AN "OCCASION" OR A "EXTRAVAGANCE," EVEN THOUGH THE PAST DECADE HAS SEEN DRAMATIC INCREASES IN EATING OUT. P. KEITH WARDELL OF THE GALLUP ORGANIZATION BELIEVES THERE IS AN ELEMENT OF GUILT THAT HELPS TO PERPETUATE THIS ATTITUDE - WOMEN STILL FEEL EATING OUT IS EXTRAVAGANT AND THAT THEY SHOULD BE PREPARING THE MEAL AT HOME.

THE FUTURE MAY CHANGE ALL THAT, HOWEVER. ACCORDING TO MR. WARDELL, THERE ARE SIGNS OF A TREND TOWARD LOOKING UPON THE MEAL PREPARED AT HOME AS THE OCCASION AND THE MEALS EATEN AWAY FROM HOME AS SOMETHING THAT IS DONE ON A REGULAR BASIS. WHEN A CONSUMER DOES PREPARE A MEAL AT HOME, SHE WANTS IT TO BE HEALTHFUL AND HOMEMADE - A MEAL PREPARED FROM BASICS OR FROM "SCRATCH." CONVENIENCE FOODS WILL BE THE COMPETITION FOR EATING OUT, RATHER THAN THE BASIC FOOD PRODUCTS.

MEN WILL BE SIGNIFICANTLY INVOLVED IN FOOD PREPARATION AT HOME IN THE YEARS TO COME, AND WE ALREADY SEE EVIDENCE OF THIS TREND. STUDIES BY THE GALLUP ORGANIZATION HAVE FOUND THAT IN THOSE HOUSEHOLDS WHERE THE HUSBANDS ARE INVOLVED IN THE PREPARATION OF MEALS, THAT THE HOUSEHOLDS USE MORE CONVENIENCE FOODS AND THEY TEND TO OWN MORE KITCHEN APPLIANCES SUCH AS MICROWAVES AND FOOD PROCESSORS.

MICROWAVE OVENS WILL SEE A SURGE OF POPULARITY IN THE NEXT DECADE.

WE KNOW THAT "FAST FOODS" HAVE HAD A MAJOR IMPACT ON OUR INDUSTRY'S PRODUCTS AND IF MARKETING DECISIONS NOW BEING MADE BY "FAST FOODS" OPERATORS ARE AN INDICATION, WE'LL SEE MORE.

CHICKEN SANDWICHES HAVE HAD A MAJOR IMPACT ON THE U.S. 400 TOP FOODSERVICE ORGANIZATIONS. HARDLY ONE CAN BE FOUND THAT HASN'T ADDED A CHICKEN SANDWICH TO ITS MENU IN THE LAST YEAR.

EGG SANDWICHES ARE GOING WELL, TOO. MACDONALD EGG McMUFFIN. THERE ARE NEW TURKEY RESTAURANTS. A PIONEER IN THE CHICKEN BREAST SANDWICH FIELD, CHICK-FIL-A IS BUILDING A NEW \$7.5 MILLION HEADQUARTERS COMPLE.

WENDY'S, THE NATION'S THIRD LARGEST HAMBURGER CHAIN, HAS ADDED CHICKEN TO ITS MENU. THE FIRM IS TESTING A BREAKFAST MENU THAT WOULD INCLUDE OMELETS, FRENCH TOAST AND EGG SANDWICHES.

THE PER CAPITA USE OF CHICKEN IN THE U.S. IS GROWING AT

A FASTER RATE THAN BEEF OR PORK. WE HAVE SEEN A CHANGE IN THE PRODUCT MIX AT FOOD SERVICE ESTABLISHMENTS -- LESS WHOLE BIRDS, MORE PARTS, MORE PREPARED ITEMS MADE FROM TURKEY AND CHICKEN.

IN FIVE YEARS SOME EXPERTS PREDICT 6% MORE EGGS CONSUMED -- BUT THERE WILL BE DIFFERENCES IN MARKETS, SOME UP, OTHERS DOWN. DR. GOLDBERG SAID THAT EGG FIRMS ARE GOING TO HAVE TO FIGHT OVER A LIMITED MARKET WITH FINANCIAL SUCCESS GOING TO THE MOST EFFICIENT, THOSE WHO HAVE NOT OVER-EXPANDED AND ARE MARKET ORIENTED. EGG PRODUCERS WILL BE VOTING IN REFERENDUM NEXT FALL ABOUT WHETHER TO PROVIDE THE AMERICAN EGG BOARD WITH MORE FUNDS FOR ITS EGG PROMOTION ACTIVITIES.

THE POULTRY AND EGG INDUSTRY DOES NOT ENJOY ANY OF THE "BENEFITS" OF A PRICE OR PRODUCTION CONTROL PROGRAM. NOR DOES IT APPEAR TO WANT TO, BELIEVING THAT THE DISADVANTAGES ARE GREATER. AND THAT MEANS THAT INDIVIDUAL PRODUCTION PLANNING PLUS STRONG MARKETING ARE MUSTS IN TODAY'S COMPETITIVE ARENA. AS I SAID EARLIER, OUR INDUSTRY HAS A LOT GOING FOR IT IF WE CAN MARKET AT PROFIT.

THE POSTAGE STAMP THIS WEEKS REACHED A PRICE INCREASE OF 400% DURING THE PAST TWENTY YEARS. THE POULTRY AND EGG INDUSTRY IS STILL SELLING ITS PRODUCTS AT OR BELOW THE PRICE OF 20 YEARS AGO.

David A. Lins, Economic Research Service

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Nineteen eighty one has been a difficult year financially for many farmers and ranchers. Low net farm income and high interest rates have created considerable financial hardships for farmers and the farm supply firms who serve them. In addition, changes in financial markets and government farm policies and credit programs have modified the traditional methods of dealing with these problems. The purpose of this presentation is to review the financial conditions of agriculture during 1981 and then to provide forecasts of the conditions likely to exist in 1982.

A Review of 1981

It is difficult to summarize all of the possible measures of financial conditions in agriculture. Our discussion here will focus on net farm income, credit availability by lending institution, delinquencies and defaults of farm borrowers, interest rates, and the growth in farm sector equity. Where possible the discussion will focus on both nominal and real changes in financial conditions.

Net Farm Income

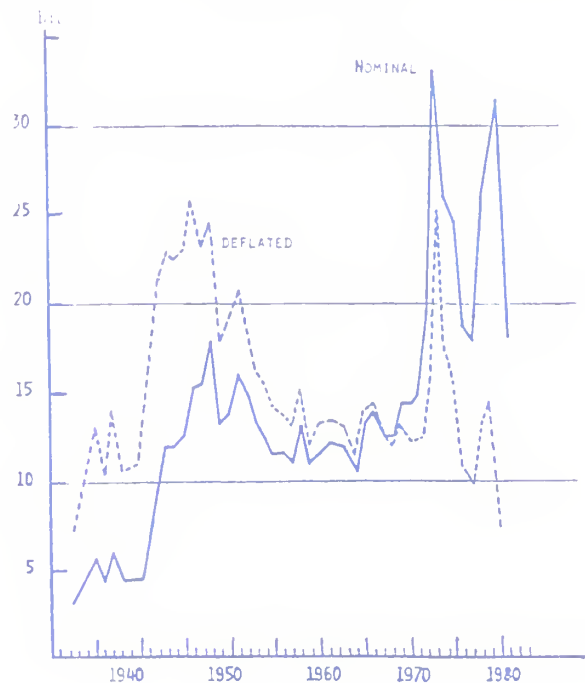
While net farm income in 1981 is not yet known with certainty, it is apparent that there will be only a modest increase over the \$19.9 billion recorded for 1980. The failure to achieve the previously forecasted increase in income is primarily due to the failure to achieve higher livestock prices.

The growth in nominal net farm income has been stagnant throughout 1981 while inflation in the general economy has remained high. Adjusting the level of net farm income for the rate of inflation provides a measure of real income. Real net farm income estimated for 1981 is approximately equal to that achieved during the depression (Figure 1). However, recognize that there are fewer farmers now than during the depression so that the amount of real net farm income per farm is well above depression levels, but still well below that achieved throughout the decade of the seventies. Income from off-farm sources has also been a major source of funds for farm families. Growth in off-farm income has matched or exceeded the rate of inflation in most years. However, the group of farmers who receive 82 percent of gross farm receipts receive only 16 percent of off-farm income.

Credit Availability

There has been adequate capital available for farm real estate and non-real estate loans, although high interest rates and depressed commodity prices have tended to reduce the demand for such loans. As of mid-year 1981, non-real estate debt was 9 percent higher than the previous year, the lowest annual increase since 1975. Likewise, real estate debt was up by 12 percent over the same time last year--a growth rate only two-thirds as high as that

Figure 1: Farm Income in Nominal and Real Terms
Farm Income



achieved by mid-year 1980. The most rapid increases in loan volume have been for the Farm Credit System and the Farmers Home Administration. Slower growth has been experienced by banks and life insurance companies (Table 1).

The average loan to deposit ratio--one measure of fund availability at banks--has dropped from the relatively high level of the 1978-79 period. Surveys indicate that many banks are willing to expand their loan volume if qualified borrowers can be found. With access to the national money markets the Farm Credit System has had little problem in obtaining loanable funds. In contrast, many insurance companies report a lack of funds to support farm mortgage loans. Starting with the new fiscal year, (October 1, 1981) the Farmers Home Administration is scaling back lending for farm ownership and economic emergency loan programs. Funds for operating loan programs, however, are expected to expand. Overall, loan fund availability has not been a problem for qualified farm borrowers.

Delinquencies and Defaults

Given the second consecutive year of depressed farm income, there is considerable concern about potential delinquencies and defaults. However, reports of commercial lenders suggest no major increase in problems, yet. The major exception is at the Farmers Home Administration where delinquencies on farm loans, particularly economic emergency loans, are up sharply. This is not unexpected since FmHA deals with more marginal borrowers.

Table 1: Institutional Farm Debt, Changes in Year Ending June 30, 1975-1981^{a/}

Type of debt and lender group	Percentage change in year ending June 30					
	1975	1976	1977	1978	1979	1980 1981
Real estate debt	14	11	15	15	18	12 18
Insured commercial banks	5	4	16	12	5	1 -2
Federal Land Banks	23	16	16	15	18	24 20
Life insurance companies	7	7	16	19	18	11 2
Farmers Home Administration	6	5	9	11	43	32 10
Non-real-estate debt	10	15	19	16	18	13 9
Insured commercial banks	3	16	16	5	10	4 7
Production credit associations	18	12	14	4	17	21 10
Fed. Int. Credit Banks (OFIs)	-3	5	6	14	31	28 27
Farmers Home Administration	59	21	25	99	55	37 35
Commodity Credit Corporation	-35	-8	685	179	25	-9 -42

a/ Source: Emanuel Melichar, "Farm Sector Financial Experience and Rural Banking Conditions, September 21, 1981.

While many lenders indicate no significant increase in loan collection problems, there is almost unanimous concern over what might happen if farm incomes do not improve soon. Lenders believe that unless incomes improve soon, the problems of delinquency and default will increase significantly.

Interest Rates

Interest rates charged farm borrowers reached record levels during 1981. High nominal interest rates have attracted considerable attention, but it is also important to take into account inflation and taxes. Adjusting for inflation gives a "real interest rate", while, adjusting for inflation and taxes gives a "real after-tax interest rate."

Using interest rates on 3 month treasury bills, it can be shown that there has been an unprecedented swing in real interest rates from negative to positive values since 1979 (Figure 2). Many analysts believe that the high real rates are unlikely to persist for an extended period of time. The high real rates could be eliminated by either a new wave of inflation or by lower nominal interest rates. However, when the economy is slumping, as it has been in recent periods, it is not expected that the price spiral will worsen. Thus some easing in short term rates is needed if real interest rates are to fall.

Interest rates charged farm borrowers typically do not respond as quickly as interest rates on 3 month treasury bills. Therefore it is also useful to look at real interest rates on farm sector loans. Real interest rates on PCA loans (excluding stock purchase requirements) are illustrated in Figure 3. Negative real rates which persisted from the first quarter of 1979 through the second quarter of 1980 have now turned positive. Thus, both the nominal and real cost of borrowing have increased in recent periods.

It is important to recognize that interest expenses are tax deductible so that higher interest rates tend to lower taxable income. Assuming a 30 percent tax bracket, the real interest rates are adjusted to arrive at a "real after-tax interest rate." Real after-tax rates were positive throughout the 1970-73 period. Since 1974, however, real after-tax rates have been negative with only a few exceptions (Figure 3). Notice also that real after-tax rates in 1981 have been no higher than in previous periods.

Despite the fact that real after tax interest rates are no higher now than in previous periods, there is still reason to believe that high nominal interest rates have lowered net farm income. Higher nominal rates increase interest expenses directly for farmers. They also increase production expenses by raising interest expenses for manufacturers and suppliers--increases in costs which may be passed on to farmers. In addition, higher interest rates may affect the demand for products by altering the real income of consumers and by modifying exchange rates and the strength of agricultural exports. However, it appears unlikely that high interest rates are the major cause of the reduced net farm income for 1980-81.

Growth in Farm Sector Equity

Growth in the farm sector equity arises from two primary sources--

Figure 2: Real Interest Rates on 3 Month Treasury Bills

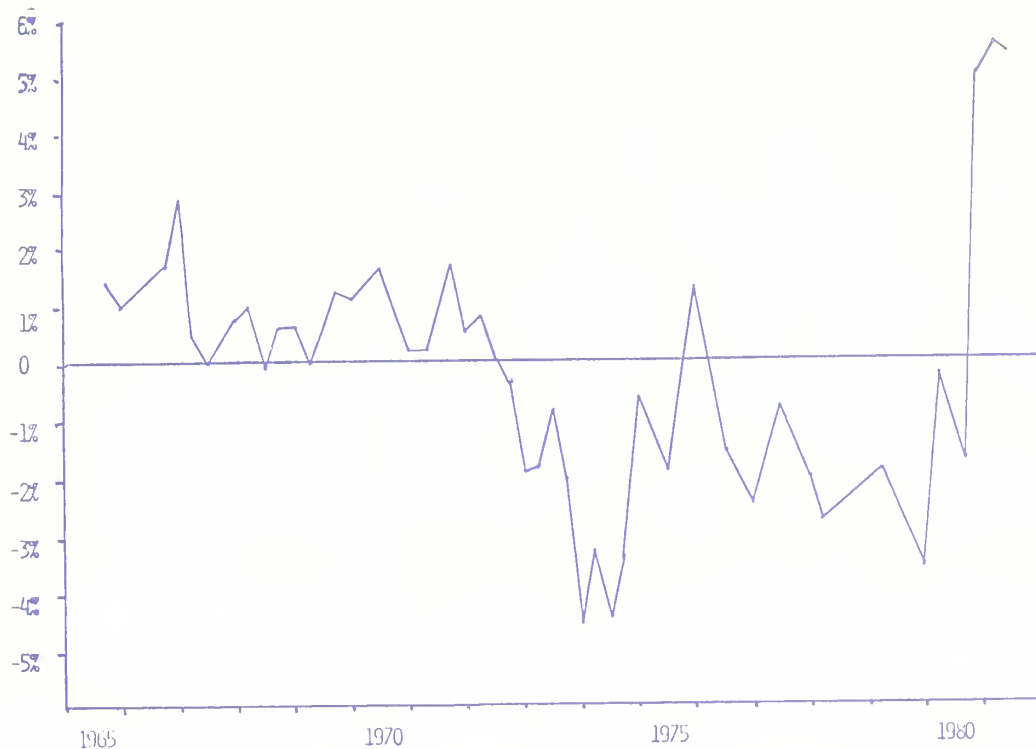
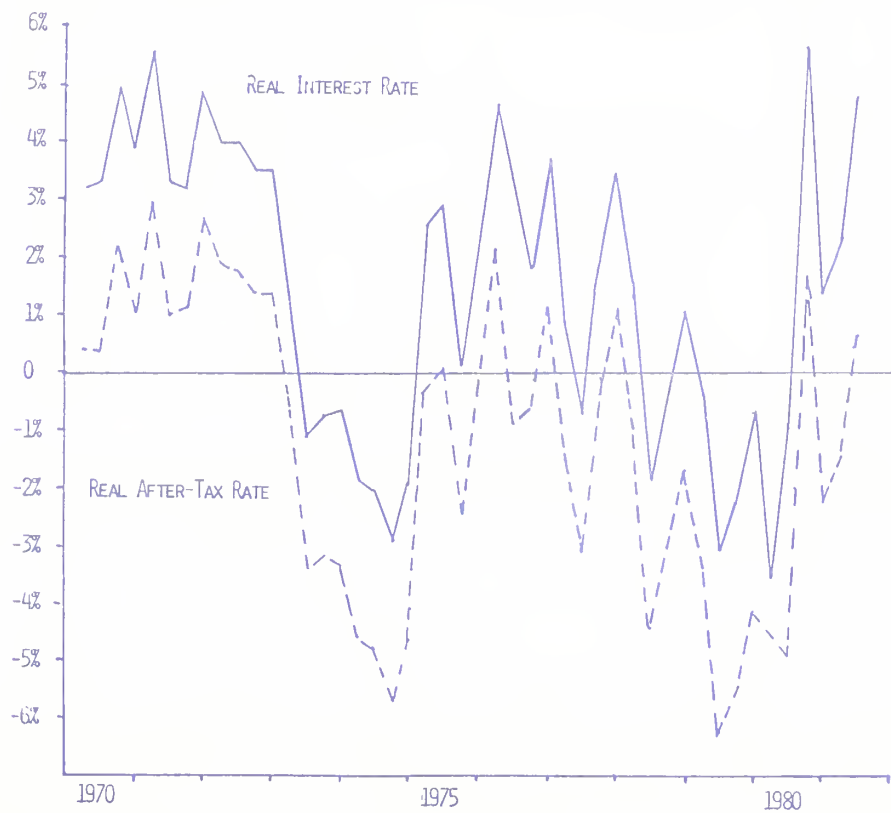
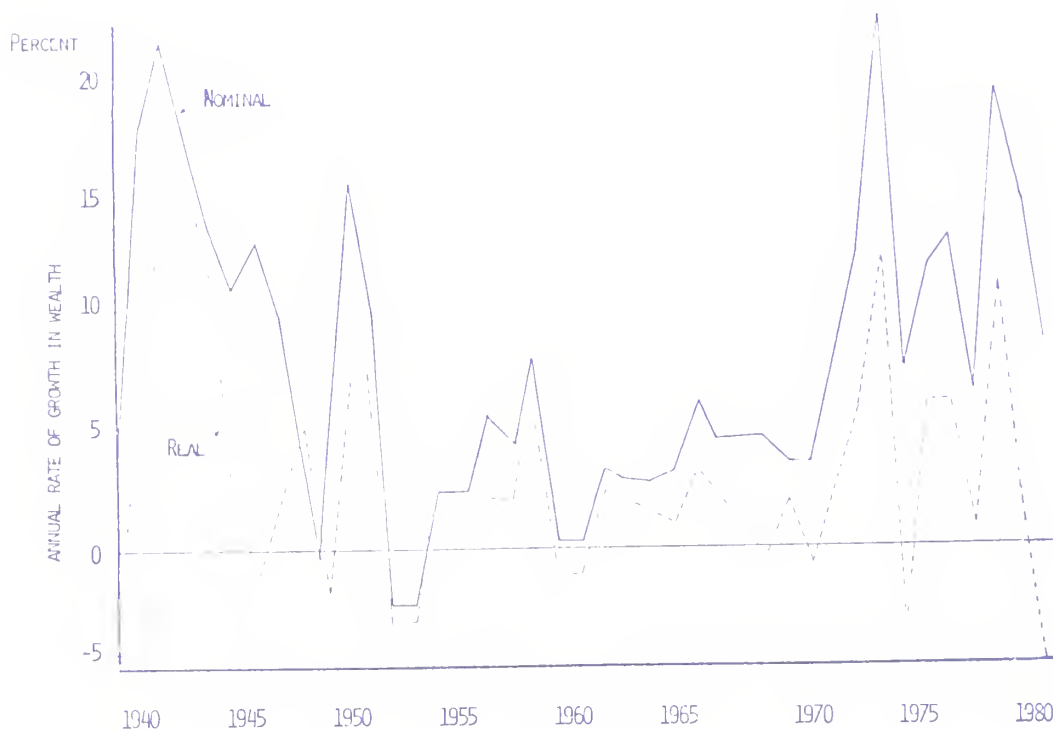


Figure 3: Real and Real After-Tax PCA Interest Rates



retained earnings and unrealized gains in asset values. To maintain or increase the purchasing power of wealth, the rate of growth in equity would need to equal or exceed the rate of inflation. Trends over time in the nominal and real rates of growth in equity are shown in Figure 4.

Figure 4. -- Nominal and Real Rates of Growth in Farm Sector Wealth



Nominal growth rates in farm sector equity have been positive in almost every year since 1940. In contrast, real growth rates have been negative about one-fourth of the time. However, the magnitude of the negative real growth rate is greatest in the 1980-81 period, indicating that the farm sector has suffered significant reductions in real wealth in recent periods, despite the fact that the growth in nominal equity has been positive.

Much of the reduction in real equity stems from the fact that real estate values in most areas have failed to keep pace with inflation. High interest rates and low farm income appear to be the underlying cause.

Prospects for 1982

Financial conditions in agriculture during 1982 are likely to reflect the success of the 1981 Economic Recovery Tax Act and our ability to expand the exports of agricultural products. Large grain stocks resulting from bumper harvests in 1981 will tend to hold down grain prices through the first half of 1982. Improvements in the last half of 1982 seem possible, but

will depend in large part on crop conditions going into the 1982 harvest season. Total net farm income in 1982, however, may be worse than in 1981.

Credit Availability

There should continue to be ample credit available for qualified borrowers during 1982. However, the availability of funds will vary by type of lending institution.

Commercial banks should enter 1982 with relatively favorable loan-to-deposit ratios. In addition, the all-savers certificates made available on October 1, 1981 should attract some additional loan funds from money market funds to commercial banks. Since 75 percent of the funds deposited in all-savers certificates must be used for housing or agricultural loans, there may be some additional loan funds made available for agriculture since few banks may wish to invest in long term housing loans. Granted that banks can invest in mortgage certificates, but if rates on these certificates should drop relative to farm loan rates, an increased interest in providing agricultural loans is likely to develop.

The Farm Credit System should continue to have little problems in attracting adequate funds to support lending operations. However, a fundamental change is occurring in the structure of these funds. Investors in long term bonds have been "burned" badly by the unexpected high inflation of recent years. As a result, the market is less willing to accept long-term bonds. Consequently, the maturity of Farm Credit System bonds, especially those supporting Federal Land Bank lending, have been shortened. While the Farm Credit System has had variable rates for some time, the shorter maturities on bonds will result in variable rates which may be even more variable than they have been in the past.

Fund availability at the Farmers Home Administration is likely to be substantially curtailed in 1982 as the administration seeks to "take care of existing business." Lending authorizations through October 1, 1982 show reductions in the farm ownership loan program and emergency loan programs, but some increase in the farm operating loan programs. The replacement of economic emergency loans with all-risk crop insurance should continue through 1982.

Life insurance companies are likely to continue to struggle to acquire funds for lending to agriculture at rates that are competitive with other lenders. However, insurance companies are actively engaged in attempts to attract capital from pension fund accounts. For example, John Hancock has established an account called ACRE (Agriculture, Capital and Real Estate) which is designed to attract pension fund dollars into agricultural investments including farm mortgages and farmland.

Credit available through merchants and dealers may also expand in 1982. Hit by slumping sales due to reduced net farm income, a number of machinery dealers are expected to offer attractive financing plans to promote sales. Farm supply dealers may also experience an increase in "credit extended" because farm operators may take longer to pay off their charge accounts.

Delinquencies and Defaults:

There is a tremendous equity base in agriculture that could be used to collateralize additional borrowing. This collateral base, combined with the fact that rates on long-term loans, especially at Federal Land Banks, have lagged behind short-term rates will lead some farmers facing cash flow problems to avoid delinquency or default through refinancing. An increase in restructuring of short term debt into long term debt is expected.

Highly leveraged operations will experience the most difficulty since they have little or no ability to support more debt. In addition, commercial lenders in the past have been able to transfer some problem borrowers to Farmers Home Administration loan programs. With the push to reduce FmHA loan programs, such switching may become less feasible. Commercial lenders will then be forced to liquidate borrowers in severe financial trouble. Increases in defaults and foreclosures are expected in 1982, but the percentage of borrowers facing such severe problems is expected to remain low.

Interest Rates

Interest rates during 1982 will depend in large part on the ability of the government to control the rate of inflation in the economy and on the degree to which the Federal Reserve System keeps strong controls on the rate of growth in the money supply. There is now evidence that the inflation rate in the U.S. economy is easing. Projection estimates of the inflation rate for 1982 are now in the range of 8-10 percent -- substantially lower than for 1980 or 1981. However, there is concern that the Economic Recovery Tax Act of 1981 will spur consumer spending and create high budget deficits adding renewed inflationary pressures.

In recent weeks there has been considerable "jawboning" designed to place pressure on the Federal Reserve System to increase the growth rate in the money supply and thereby reduce high interest rates. The extent to which the Federal Reserve accedes to these pressures will have a significant impact on interest rates in 1982. Rapidly increasing the money supply would likely create additional inflationary expectations thereby increasing interest rates. Unusually low growth in the money supply could restrict the supply of credit and thereby maintain the current high interest rates. The Federal Reserve appears committed to a moderate growth rate in the money supply with only a gradual easing in interest rates expected.

While the future direction of interest rates in the economy is not known with any degree of certainty, the direction of some agricultural interest rates is easier to predict. For example, for the first 9 months of 1981, the Farm Credit System issued \$40.4 billion dollars in bonds with a weighted average interest rate of 15.63 percent. For bonds with over one year maturity, the average interest rate was about 14.5 percent. At the same time the interest rates on new loans at Federal Land Banks over this period ranged from 11 percent to 13 percent. Issuing bonds at a higher cost than the interest rate on loans is made possible by the fact that interest rates charged by Federal Land Banks are based upon the average cost of bonds outstanding, not just the most recent issues. However, these figures do suggest that unless the cost of issuing bonds drops drastically, the interest rates charged by Federal Land Banks will rise during 1982.

To a lesser extent, Production Credit Associations face the same problems with rising interest rates as do Federal Land Bank. The cost of bonds issued by the Federal Intermediate Credit Banks exceeded interest rates charged on PCA loans throughout much of the first three quarters of 1981. If the cost of issuance of FICB bonds remains at current levels, PCA interest rates are likely to rise. Because most of the FICB bonds issued are relatively short-term, the average cost of bonds outstanding could drop if the cost of new issues in 1982 drops significantly. A USDA projections model had forecast PCA interest rates in the range of 14-15 percent during 1982.

Interests rates on agricultural loans charged by commercial banks vary tremendously from one bank to the next. During August of 1981, the most common interest rate on bank farm loans was between 19 and 20 percent. If the inflation rate in the economy falls below 10 percent and if the Federal Reserve System maintains a middle of the road posture on growth in the money supply, a significant reduction in bank interest rates might be expected in 1982. This suggests that for the first time in the last 5 years, the interest rate advantage of the Farm Credit System over other lenders will be reduced.

Growth in Farm Sector Equity

Nominal growth in farm sector equity due to retained earnings is expected to remain low during 1982. Prospects for a significant improvement in net farm income, particularly during the first half of 1982, seem poor. Given a third consecutive year of low income, it will be difficult for many operators to save money for investment in the farm business.

Capital gains on assets have also been a major source of growth in equity for the farm sector. Important nonreal estate assets for farm firms include crop and livestock inventories and farm machinery. Capital gains on these assets during 1982 are expected to be minimal since there is little improvement expected in crop and livestock prices over 1981 levels.

If the current projection estimates of poor farm income in 1982 hold true, then the farm real estate market should also remain sluggish. Transfer rates should be low and the value of real estate may increase in the range of 6-10 percent during 1982. However, significant regional differences may develop. The Midwest sections of the country may experience a relatively weak land market because of low prices on corn, beans, wheat and hogs. In contrast, some of the specialty crop areas of the South and in California may experience a relatively strong land market.

Forecasts of the 1982 inflation rate in the general economy vary, but if the overall inflation rate is in the range of 8-10 percent, a continued reduction in the real wealth position of the farm sector is anticipated. If this forecast materializes it will be the first time in the last forty years that real wealth of the farm sector has declined for three consecutive years.

Summary and Conclusions

Nineteen eighty one has been a difficult year for many farmers. While net farm income during the year is likely to be slightly higher than in 1980, real income continued to fall. Likewise, the real wealth position of farmers

has declined. For 1982, there is little prospect for major improvements as real net income and real wealth are forecasted to continue to fall.

There will be an adequate amount of loanable funds at financial institutions for qualified borrowers. However, more borrowers will fail to qualify and government lending agencies appear to be less reluctant than in the past to bail out borrowers in financial difficulty. As a result, some increase in delinquencies and defaults on loans is expected during 1982.

Interest rates on farm loans may decrease for some institutions and increase for others. A drop in the overall inflation rate will place downward pressure on rates at commercial banks. But unless rates drop rather dramatically, there is less hope for a drop in rates charged by the Farm Credit System, especially rates charged by Federal Land Banks.

Overall, it appears now that many of the financial problems in the farm sector during 1981 will remain throughout at least the first half of 1982. Depressed farm income, high interest rates and declining real wealth of the farm sector will continue to be the focus of much discussion and debate. Yet there appears to be a strong grass-roots feeling that the farm sector will eventually emerge into a new period of prosperity. This optimism will help sustain farm firms through the difficult financial conditions expected for 1982.

PROSPECTS FOR AGRICULTURAL CREDIT

BY

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The views expressed herein are solely those of the author and do not necessarily represent the views of the Federal Reserve Bank or of the Federal Reserve System.

Changes in national financial markets and the increasing impact of these markets on agriculture have heightened the level of interest in agricultural credit conditions. Moreover, the currently bleak prospects for farm income raise additional questions about the willingness and ability of lenders to provide needed lines of credit and of farmers to service this credit on an acceptable basis. In addressing these issues, this paper examines current agricultural credit conditions and the credit outlook for 1982.

FARM CREDIT CONDITIONS

The following analysis of farm credit conditions is principally based on data gathered from agricultural banks (those with a 25 percent or greater agricultural loan ratio) in the Tenth Federal Reserve District. This quarterly survey is conducted by the Federal Reserve Bank of Kansas City. Similar surveys are conducted by the Chicago, Dallas, Minneapolis, and Richmond Federal Reserve Banks. Data from those Banks' surveys are generally consistent with Tenth District survey data.

Interest rates on farm operating loans at Tenth District agricultural banks advanced to 18.1 percent by the end of the third quarter this year. This level of interest rates is the highest recorded during the six years the survey has been

conducted. Operating rates are now about 29 percent above year-earlier levels. Chart 1 indicates the movement of interest rates on operating loans over the six years the quarterly survey of agricultural credit conditions has been conducted in the Tenth District. Since late 1979 interest rates on agricultural loans have become increasingly responsive to national money market conditions. Moreover, during 1981 the differential between the national prime rate and agricultural bank lending rates appears to have narrowed somewhat.

Unlike 1980 when very high interest rates early in the year declined sharply as planting time approached, farmers have experienced high interest rates throughout the 1981 production season. Operating loan rates at Tenth District agricultural banks did not decline below 16.3 percent during the first three quarters of this year. In 1980 rates on similar loans fell to 14.1 percent during the summer. Interest rates did not resume an upward trajectory then, until late in 1980. Operating loan interest rates at agricultural banks in the Chicago, Dallas, and Minneapolis Federal Reserve Districts over the past year have been somewhat higher than in the Tenth District. Interest rates for similar loans have been somewhat lower in the Richmond District (table 1).

Chart 1

Tenth District Interest Rates At Agricultural Banks

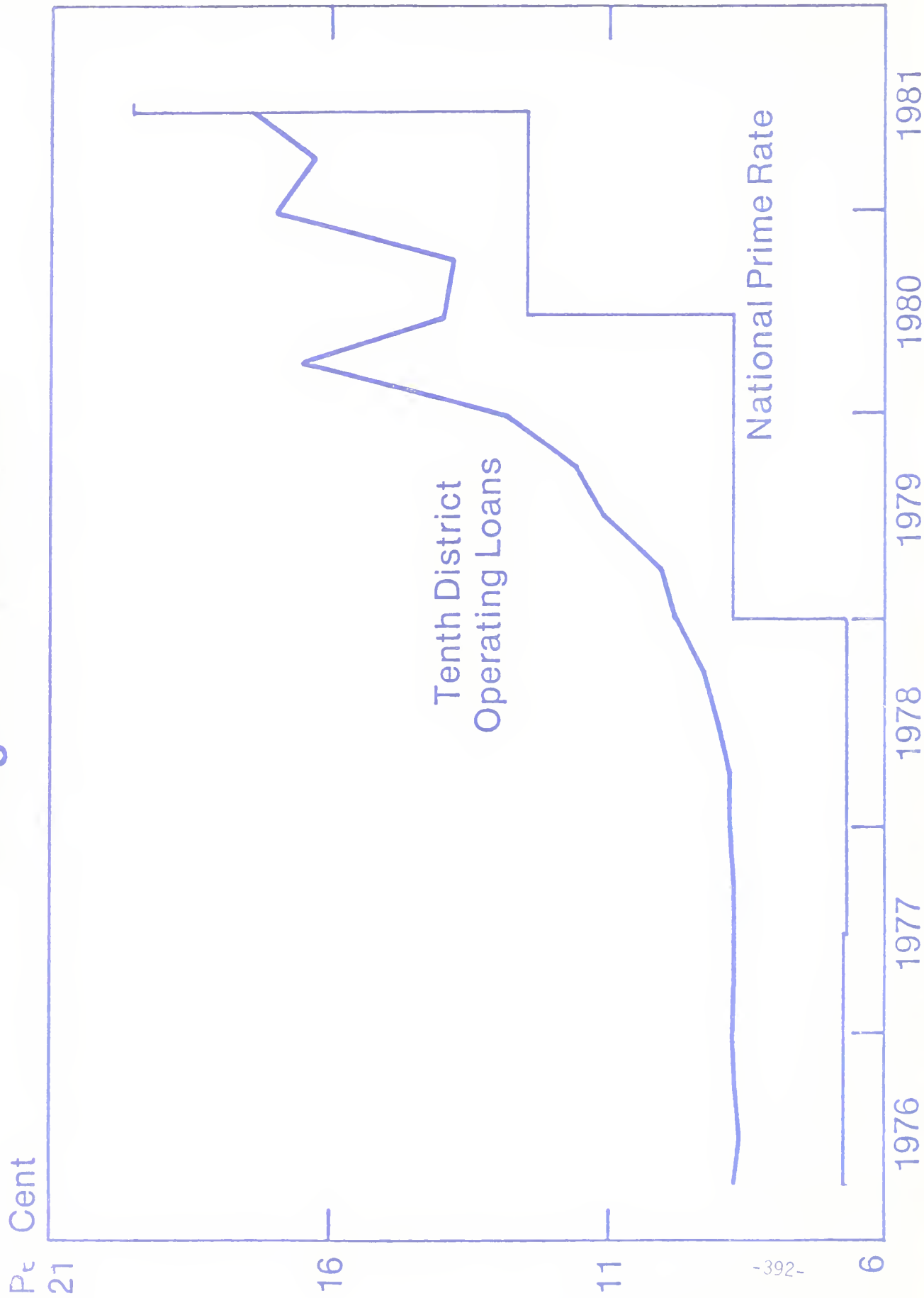


Table 1
SHORT-TERM INTEREST RATES
AT DISTRICT BANKS

<u>Federal Reserve Bank Districts</u>	<u>Operating Loans</u>			<u>Feeder Cattle Loans</u>		
	<u>1981 3rd Qtr</u>	<u>1981 2nd Qtr</u>	<u>1980 3rd Qtr</u>	<u>1981 3rd Qtr</u>	<u>1981 2nd Qtr</u>	<u>1980 3rd Qtr</u>
Chicago	19.0	17.8	14.3	19.2	17.7	14.3
Dallas	19.6	18.6	13.3	20.1	18.8	13.3
Kansas City	18.1	17.4	14.1	18.1	17.4	14.0
Minneapolis	18.9	18.0	14.0	*---	*---	*---
Richmond	18.5	17.8	13.7	18.7	17.9	13.8

*No data available.

SOURCE: Federal Reserve Bank of Kansas City.

While many farmers had previous experience with variable interest rate loans at Farm Credit System outlets, changes in those rates had been relatively small prior to 1980. Thus farmers had little previous experience to prepare them for the marked increase in interest rate volatility of the past two years. Two factors appear responsible for that volatility. First, new operating procedures for implementing monetary policy, designed to improve Federal Reserve control over the money supply, mean as a consequence greater variability of interest rates. Second, on-going deregulation of the nation's financial institutions has more fully integrated agricultural banks and farmers into the broader financial markets.

Availability of credit, as measured by an index of fund availability at Tenth District agricultural banks, has declined slightly from the second quarter of this year and from a year earlier. A measure of liquidity, the loan to deposit ratio, increased slightly at Tenth District agricultural banks to 61.8 percent from 61.2 percent in the second quarter of 1981 - indicative of slightly less liquidity and fund availability. However, about 41 percent of responding banks were actively seeking new farm loan accounts - up from 39 percent in the second quarter this year. Moreover, only about 11 percent of the responding banks had refused loans during the third quarter of this year due to fund availability problems. On balance, credit availability at Tenth District agricultural banks appears adequate to meet expected demand. Fund availability also appears to be adequate at agricultural banks in other Federal Reserve Districts conducting agricultural credit surveys.

Loan demand has trended lower over the past quarter at Tenth District agricultural banks. This pattern is consistent with declines in loan demand reported by other Federal Reserve Banks with agricultural credit surveys. The declines in loan demand are likely the result of both self imposed credit rationing by farmers and tighter loan qualification standards by bankers. Loan collateral requirements have increased slightly over the past year at responding banks, as well.

Loan repayment rates at Tenth District agricultural banks declined during the third quarter of 1981 to the lowest levels since early 1977. Slightly greater demand for renewals or

extensions of loans suggests farm borrowers are experiencing some increased cash flow problems. Repayment rates appear to have declined during the third quarter at agricultural banks in other Federal Reserve Districts, as well.

It is too early to assess the full extent of possible farm credit problems. These will not become apparent until late in 1981 or early in 1982, when farm borrowers settle 1981 credit lines and begin to arrange for 1982 credit lines. However, because of lagging farm product prices and increased production prices, Tenth District agricultural banks expect 73 percent of their farm customers to experience deterioration in net worth positions this year. If expected real estate appreciation is not taken into account, over 85 percent of these banks' farm customers may experience declining net worths. Thus, those farmers without real estate appreciation to tide them over the current farm income decline face potentially more serious credit problems than those with farm real estate.

Fortunately, farmers as a group hold substantial credit reserves - largely equity in farm real estate. As a result, most farmers will survive current income problems with their farm businesses intact. The problem is more immediate for farmers who do not have an equity cushion. Tenth District agricultural bankers expect about 5.6 percent of their farm customers to experience sufficient deterioration in credit worthiness this year so that they will no longer qualify for normal commercial credit in 1982. This proportion compares with about 2 percent of their customers who typically fail to qualify.

THE FARM CREDIT OUTLOOK

Farm credit from most sources will be readily available for credit worthy borrowers during 1982. However, for those who may have to rely on government sources, credit availability will likely be reduced. The track record Farm Credit Banks have established in the nation's money markets assures those institutions of adequate funding at rates only slightly higher than that paid by the U.S. Treasury. However, because the cost of Farm Credit Bank funds to borrowers is based on an average cost of funds, some upward movement in rates could be expected even if financial market conditions stabilize, as outstanding debt is rolled over and maturing bonds carrying lower interest rates are replaced with new bonds at higher rates. Likewise if market rates decline, Farm Credit Bank rates to borrowers will decline with some lag, due to average cost pricing.

Commercial banks appear to be well positioned to provide for the credit needs of their farm customers. In the Tenth Federal Reserve District, agricultural credit survey data indicate adequate funds to meet expected credit demand. These results are supported by survey data from the Dallas, Chicago and Minneapolis Federal Reserve Districts, as well. However, banks are clearly examining loan applications more carefully, with greater attention to the repayment capacity of the borrowers.

Those farmers who turn to the federal government will find credit more difficult to qualify for, more costly, and likely to

be less available. Widespread concern over the growth of such credit--accounting for just over 24 percent of all nonreal estate debt outstanding at mid 1981, indications of fraud and misuse of such funds by some farmers, and a mood of fiscal austerity have prompted a number of government actions. Among those are linking FmHA interest rates on farm ownership and operating loans to the governments' cost of money and higher interest rates and tighter qualifications on disaster loans. Commodity Credit Corporation nonrecourse loans now carry higher interest rates, 14.5 percent.

Factors Affecting Interest Rates

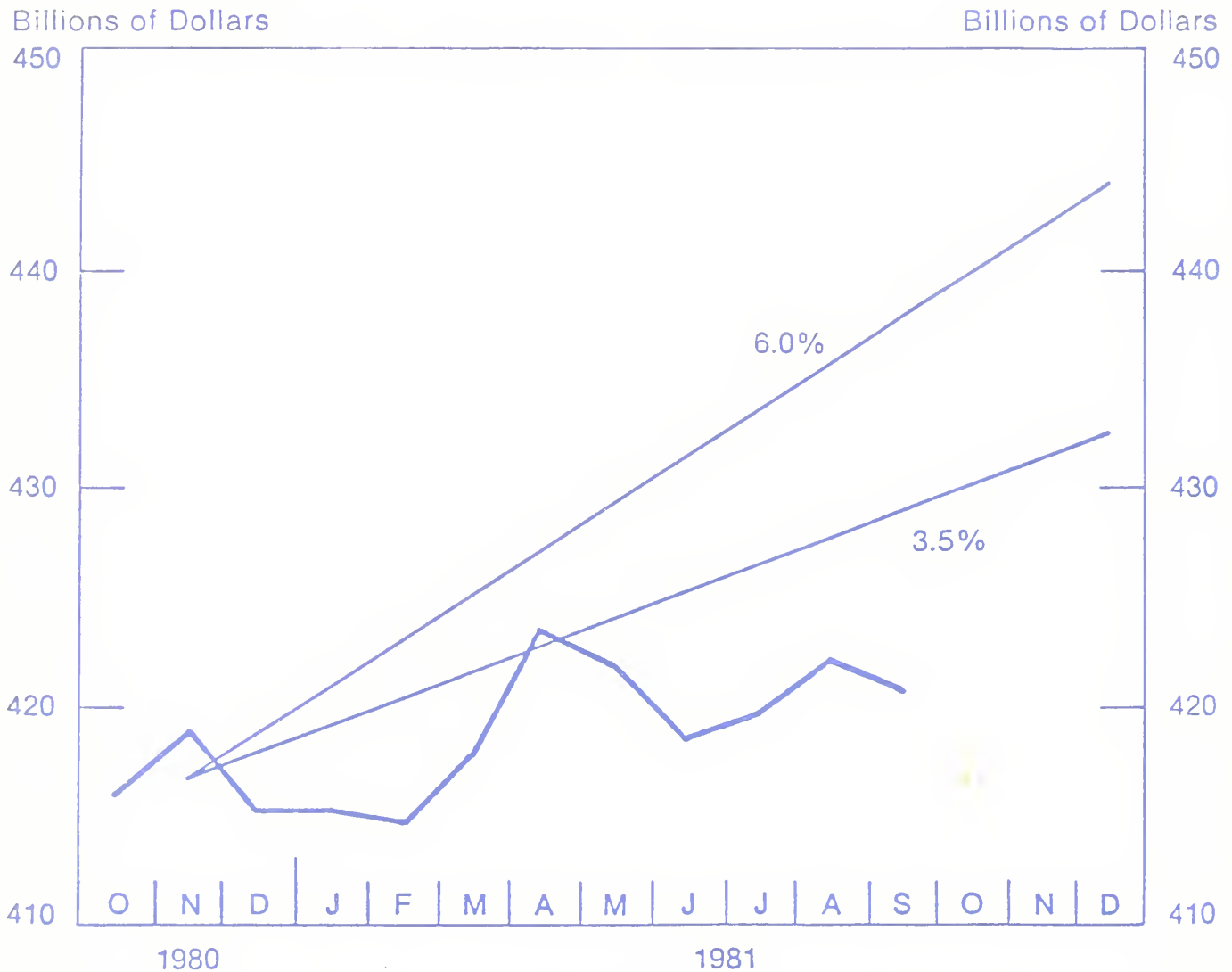
As an official of a Federal Reserve Bank, it would be inappropriate for me to forecast interest rates. Those who do are seldom right. It is instructive, however, to examine the factors that will affect interest rates over the next several months.

Regarding monetary policy, the Federal Reserve will continue to restrain the growth of the money supply. While a number of money supply measures are monitored by the Federal Reserve, the two currently given the most weight in policy deliberations are M1-B — demand deposits at commercial banks, currency and NOW accounts—and M-2 — M1-B plus savings, small denomination time deposits at depository institutions, overnight repurchase agreements at commercial banks, and overnight Eurodollars held by U.S. residents.

Federal Reserve money supply growth targets for 1981 are 3.5-6.0 percent for M1-B and 6-9 percent for M-2 (Charts 2 and 3). M1-B has grown at an annual rate of 1.2 percent thus far this year, while M2 has grown at an 8.8 percent rate. The 1982

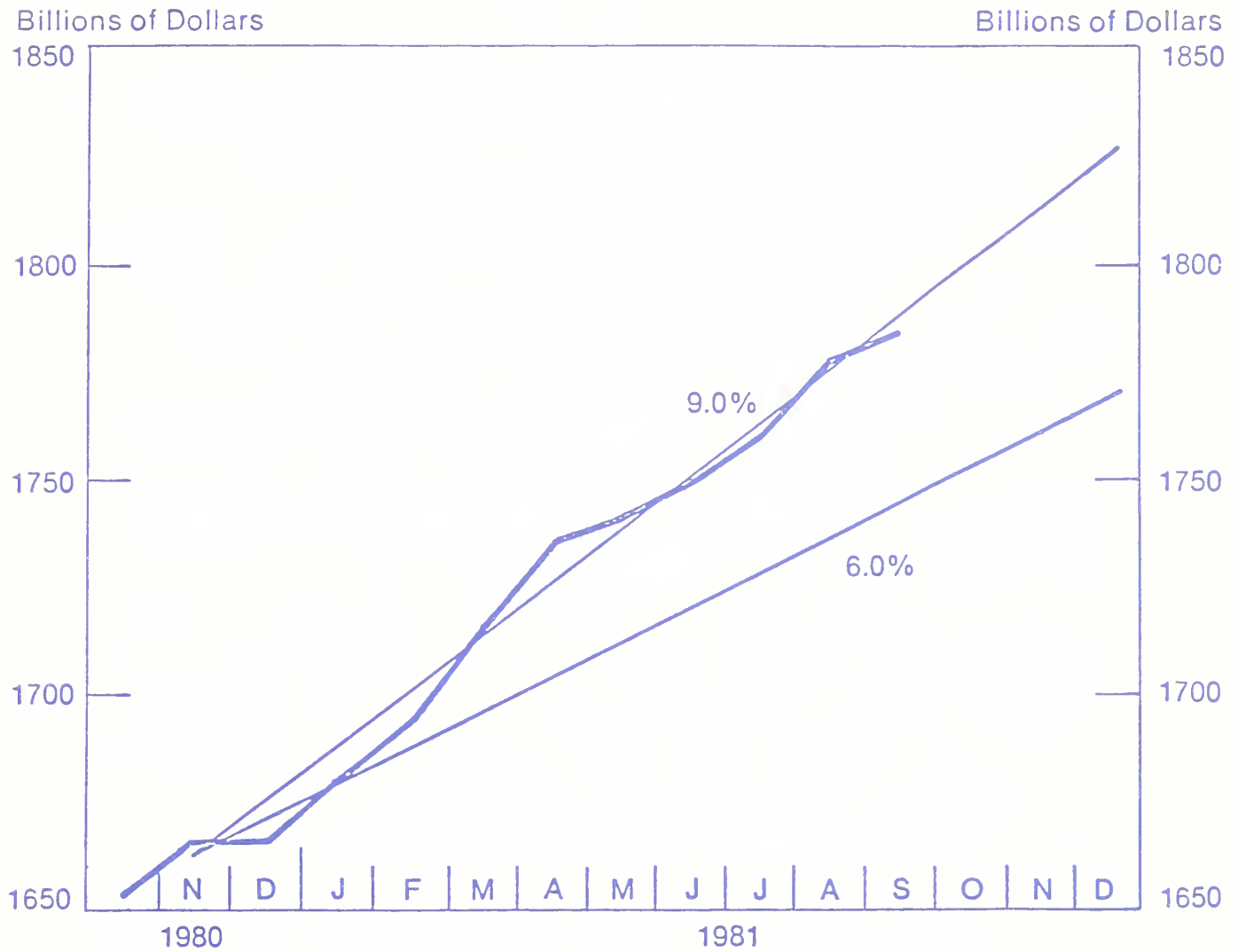
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M1-B GROWTH RANGE AND ACTUAL M1-B ADJUSTED FOR IMPACT OF NOW ACCOUNTS



SOURCE: Board of Governors of the Federal Reserve System,
Washington, D.C.

M2 GROWTH RANGE AND ACTUAL M2



SOURCE: Board of Governors of the Federal Reserve System, Washington, D.C.

targeted range for M1-B has tentatively been set a 2.5-5.5 percent and for M-2 remains at 6-9 percent. These tentative 1982 targets reflect the changing relationship between M1-B and M-2 growth as deregulation of the financial institutions and evolution of new financial instruments occur. They also reflect the Federal Reserve's resolve to limit money growth over time to rates more consistent with price stability.

Currently, procedures for implementing monetary policy involve selecting a bank reserve growth path (for nonborrowed reserves) believed to be consistent with the desired growth in the money supply. This intermediate target is then monitored, with nonborrowed reserves being added to and removed from the commercial banking system as necessary to achieve the reserves growth path. These operating procedures provide the Federal Reserve with greater control over growth in the nation's money supply. The increased attention to money growth targets does mean, however, that interest rates are determined - within relatively broad ranges - by supply and demand in the market place.

Consistent with current operating procedures, as M1-B growth has fallen below its targeted range, the Federal Reserve has added nonborrowed reserves to the banking system. This action has been partially responsible for recent reductions in the national prime rate to the current level of 18 percent. Another factor in the recent prime rate decline has been the relatively weak U. S. economy. As demand for bank credit declines, other things being equal, interest rates soften.

Sluggishness in the U.S. economy, expected by many economists to continue through mid-1982, will likely serve to limit credit demands by both businessmen and consumers in the months ahead. Thus far this year, however, demand for bank credit by business has been surprisingly strong, as high interest rates have discouraged firms from raising funds in the commercial paper market and diverted their credit demand to commercial banks.

U.S. Treasury demands on the nation's capital markets will be large over the next several months. It now appears that the federal budget deficit in fiscal 1982 may exceed \$60 billion. Deficits in the 1983-84 period are also expected to exceed previously targeted levels by substantial margins. Financing significantly higher deficits in the nation's capital markets will add upward pressure to interest rates. Such deficits may also fuel inflationary expectations.

Finally, price inflation and expectations about inflation will continue to affect interest rate levels. As lenders and borrowers have become conditioned to higher rates of inflation, lenders on the one hand have demanded higher rates of interest as protection against expected inflation. On the other hand, borrowers have been willing to pay such rates because they expected inflation would enable them to repay the loans with cheaper dollars. As a consequence of such expectations, the real interest rates (before taxes) have climbed to historically high levels during 1981 and has thus far stayed very high. Lowered inflation expectations could significantly reduce the real interest rates that lenders require and that borrowers are willing to pay.

The rate of price inflation, as measured by the Consumer Price Index, declined somewhat in 1981 from the 12.4 percent rate of 1980. Moreover, a weak economy in 1982 may permit further progress in reducing price inflation. The heavy 1982 union-industry bargaining schedule may result in contract settlements more compatible with lower underlying rates of price inflation than if negotiation occurred during a period of stronger economic growth. The nation has been very fortunate on energy and food prices during 1981, as increases in these prices lagged the increases in the general price level. Indications currently are that these energy and food price trends will extend well into 1982.

Thus, on balance, some softening in money market rates may be possible during the next several months. However, financing a large federal deficit and—later—the private sector credit demand associated with stronger economic growth can be expected to result in some trends toward firming in credit markets. Inflationary expectations will probably be reduced slowly and only as progress on inflation becomes apparent. Thus, on balance, it seems reasonable to expect that reductions in both price inflation and interest rates may be relatively moderate.

SUMMARY

In summary, agricultural credit is expected to be readily available during 1982. The cost of credit will likely continue to be high, by historical standards. Despite the current farm recession, most farm businesses will be able to acquire and repay the credit needed for production and capital investment.

A small minority of farmers will have difficulty acquiring and repaying needed credit. Hence, some increase in turnover of farm operatorships may occur during the next year.

It is generally recognized that the adverse impact of unfavorable national economic conditions on the agricultural sector is currently a far more serious problem than is farm credit availability. Indeed, progress on price inflation and a return to a higher level of economic growth appear to be basic to achieving improved farm prosperity.

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There are too many factors which influence financial "health", that vary with each individual situation, to make generalizations about all farmers' financial situations. While researching this subject, we found:

- 1) There is a wide variation in the financial conditions of farmers -- from that of being bankrupt, or nearly bankrupt, to some highly profitable operations.
- 2) Where there is a problem in the financial condition, it is a problem of illiquidity -- a lack of cash flow to meet financial obligations.

Farmers in the latter category face a tough economic challenge during the immediate months ahead. The problem has been precipitated by high interest rates, coupled with rising production costs and low commodity prices. The depressed prices were triggered by record crop production in 1981 and a sluggish demand for grain and livestock products.

For many years, farmers have substituted capital for labor to increase production efficiency. This has taken the form of purchasing larger equipment, and making relatively large investments in specialized livestock buildings and equipment. Farmers compete with their neighbors and outside investors to purchase additional farm land. This competition for land (for expansion) has driven up land prices and cash rents. As a consequence of the high capital requirements, many farmers have borrowed heavily, and are highly leveraged. Interest charges on land purchases financed with variable interest rates have escalated in recent months. As profit margins erode, or become negative, a severe cash flow problem results for those farmers operating on large amounts of borrowed money.

In these modern farming operations, the risks have increased, and the flexibility decreased. Budgets have been predicated on making "top yields and receiving top prices". Increased variability in weather patterns causes a great variation in yields, even for the best producers. An irrigation system can not overcome the impact of extremely high temperatures, for example. And the resultant variation in commodity prices has made it increasingly difficult to "top" the market. In fact, with large amounts of money borrowed, the lender often has demanded payment rather than let the farmer "hold for a higher price".

The severity of the cash flow problem varies with the continuum of the classification of farmers. For well established farmers, who own substantial assets, if there is a problem, it may be one of a temporary nature. However, there are many farmers with substantial assets that are highly leveraged, and

may face the choice of restructuring their debt obligations at current high interest rates or a reduction in the scope of their operations. If forced to sell in a short period of time, the market for specialized livestock facilities may be quite depressed -- or limited. Land prices in some areas have declined 10 percent or more from 1980 peak levels in cases where a cash sale was required.^{1/}

In this paper, we will examine the economic climate in a historical context, with emphasis on corn, soybean, hog, and land prices under Indiana or comparable Midwest conditions. Figure 1 shows the U.S. average annual corn price per bushel in current dollar and real dollar^{2/} terms for the period 1948-1981. Current dollar prices for the last several years are relatively high in a historical sense. But, when adjusted for the impact of inflation, prices are similar to those of 20 years ago. Also, the purchasing power of each bushel of corn has gone down substantially since the peak years of 1973-1974. A similar "story" is revealed for soybeans (Figure 2) and hogs (Figure 3).

Statements about prices alone ignores the vast changes in production per farmer that have occurred in agriculture during the past 20 years. This has been a function of changes in volume and efficiency. Efficiency for grain production can be measured by the bushels produced per acre. For example:

Table 1.

<u>Year</u>	<u>Corn</u>	<u>Percent Change</u>	<u>Soybeans</u>	<u>Percent Change</u>
1958 - 62	69.6		27.2	
		+50		+31
1977 - 81 ^{3/}	105.0		35.6	

In addition, farmers in Indiana have increased their average farm size 32 percent during this time period. The real prices (average) of corn and soybeans were similar during 1958-62 and 1977-81. Farmers improved their total purchasing power by simply producing more bushels. The problem, as perceived by farmers, is that the purchasing power of products they sell is sharply lower than the 1973-75 period. The real price of corn declined 31 percent and soybeans declined 24 percent from 1973-75 to 1979-81.

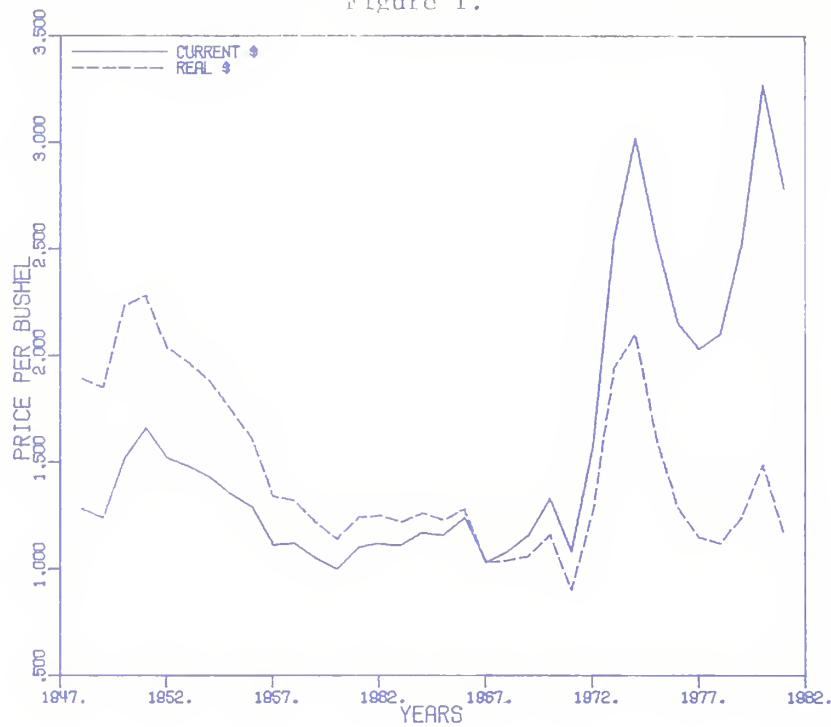
The situation is similar for hogs, except the gains in production efficiency were not nearly so large. Most income gains were achieved by expanding volume -- the number of hogs produced per farm increased.

^{1/}Discussion with Federal Land Bank officers at Purdue University, August 20-21, 1981.

^{2/}All real dollar calculations are deflated by the implicit GNP price deflator 1967 = 100.

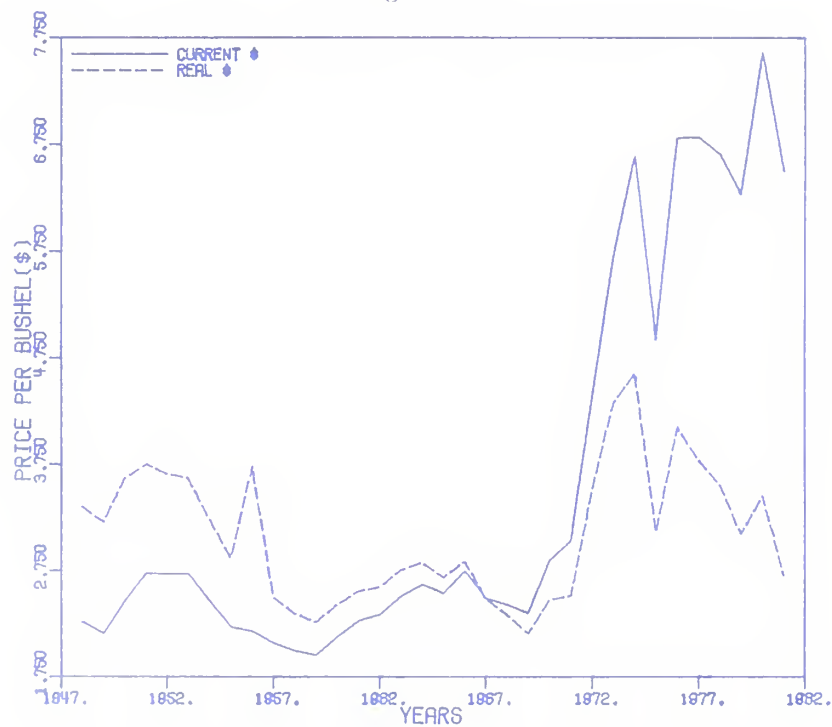
^{3/}1981 figures in Table 1 and all subsequent tables, are estimates.

Figure 1.



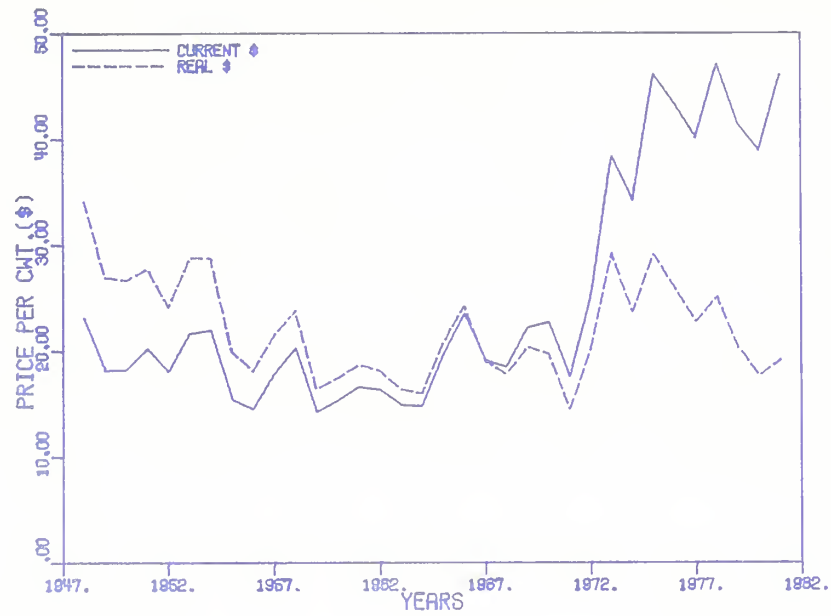
U.S. AVERAGE CORN PRICE/BUSHEL

Figure 2.



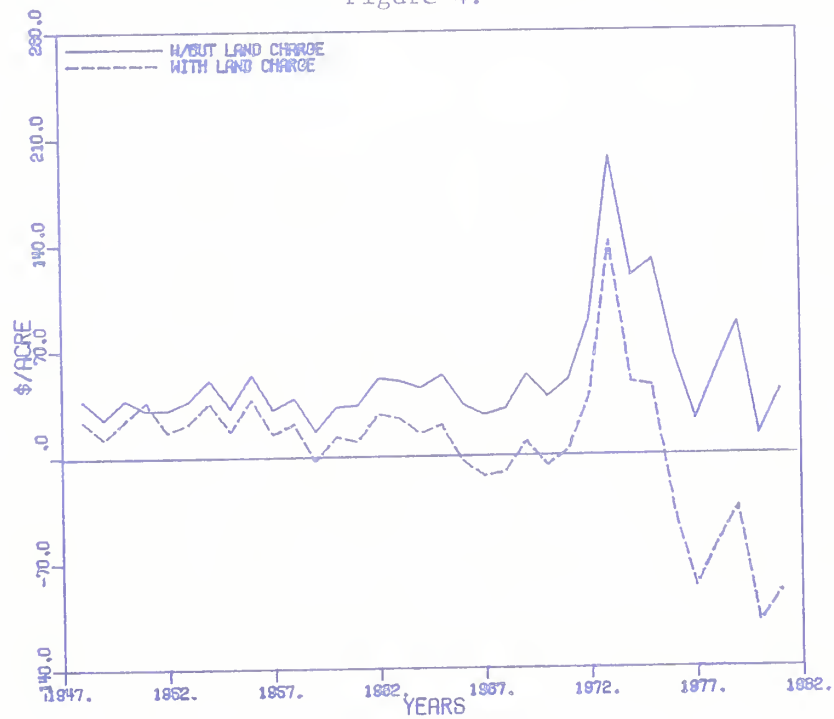
U.S. AVG. SOYBEAN PRICE/BUSHEL

Figure 3.



U.S. AVG. HOG PRICE/CWT.

Figure 4.



CORN RETURNS/ACRE

The discussion of volume and efficiency tells only part of the story. The bottom line -- which is profits -- must also be examined. Figure 4 shows returns per acre for corn from 1948-1981. This information is a generalization for Indiana conditions using average yields and average annual prices, and may be different for other areas. The overall trend would most likely be similar in other areas. The solid line shows returns above all fixed and variable costs except land charges. This can illustrate, for example, what a farmer would have remaining to pay for cash rent. The dashed line shows all costs including a land charge. Figure 5 shows the same returns for soybeans.

On a crop share lease, the production expenses and crop returns are shared. A typical tennant farmer on a 50-50 crop share lease with average yields is about at a break-even level in 1981, using the afore mentioned information.

Returns per acre presented in this context use an Economists definition of costs -- that of opportunity cost. Land charges in the previous series are in essence cash rent equivalents. Stated another way, a farmer/landowner could rent his land out at the existing market price instead of farming it himself. The foregone opportunity is considered his land charge. The same logic is applied to the returns to labor and management included as costs.

Most farmers are more "cash flow" oriented in assessing their financial and/or profit position. For example, they are more concerned with having the money to pay the fertilizer or the fuel bill rather than being concerned about the rate of return to labor, or any other factor of production.

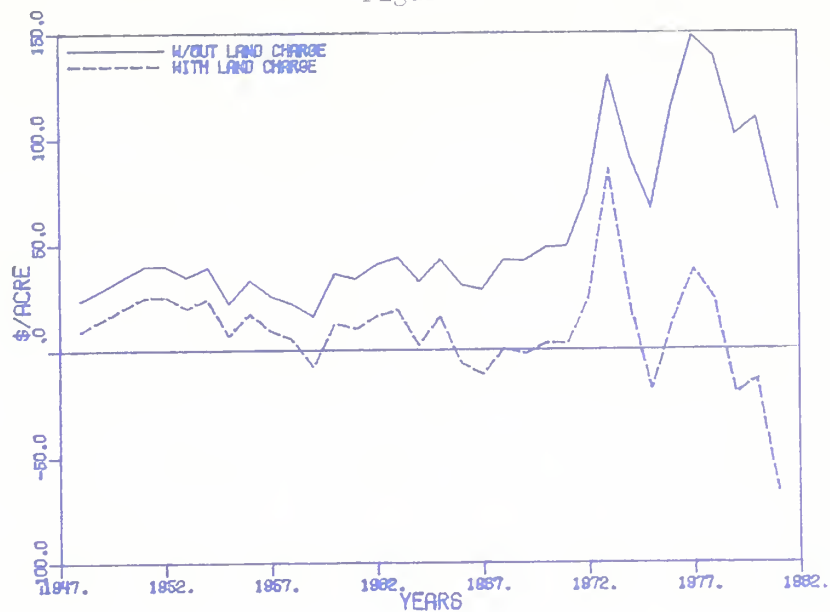
Table 2 is an example of how a farmer may view his profit picture. This shows the returns per acre above all variable and fixed costs (including land) for corn and soybeans. The change here is that the land cost varies according to when it was purchased.^{4/} Land acquired in 1967 was less expensive and has a lower interest rate associated with it, in most cases, compared to 1972, 1977, or 1980. Profits viewed in this manner are much different compared to costs calculated using current land values. Table 2 indicates profits for both corn and soybeans -- at any land charge -- are not as high in 1980-81 as the 1973-75 peak. But, if the profits for both corn and soybeans are averaged; land purchased in 1967 and 1972 did not experience a loss until 1981. The problem of chronic losses is only evident in land purchased in 1977 or later.

In the Midwest, only about 2 to 3 percent of the land base is sold each year. Thus, only 10-15 percent of the acreage would have a land cost associated with 1977 and later land prices. Many farmers have land purchased over a period of years, and may still have an "average" cost that will return "cash-flow" profits -- even at 1981 price levels.

^{4/} The calculated terms of sale were:

	<u>1967</u>	<u>1972</u>	<u>1977</u>	<u>1980</u>
Interest Rate (percent)	5.5	6.5	9.0	12.0
Terms (years)	30	30	30	30
Down Payment (percent)	20	20	20	20
Payment per acre per year	\$21.63	\$27.01	\$90.24	\$171.12
Price/acre (dollars)	\$393	\$441	\$1,159	\$1,723

Figure 5.



SOYBEAN RETURNS/ACRE

Table 2.

Net Returns Per Acre for Selected Land Acquisition Prices

Corn					Soybeans			
Land Purchased in:					Land Purchased in:			
	1967	1972	1977	1980	1967	1972	1977	1980
1967	\$ 5.37				\$ 7.34			
1968	9.40				21.12			
1969	31.67				20.85			
1970	17.08				26.97			
1971	28.13				27.45			
1972	67.77	\$ 62.39			52.32	\$ 46.94		
1973	174.92	169.54			108.21	102.83		
1974	96.13	90.75			69.57	64.19		
1975	107.09	101.71			45.23	39.85		
1976	42.92	37.54			93.53	88.15		
1977	1.52	-3.86	\$-67.09		126.81	121.43	\$ 58.20	
1978	34.27	28.89	-34.34		117.09	111.71	48.48	
1979	65.37	59.99	-3.24		80.13	74.75	11.52	
1980	-8.95	-14.33	-77.56	\$-158.44	88.16	82.78	19.55	\$ -61.33
1981	-21.15	-26.53	-89.76	-170.64	9.57	4.19	-59.04	-139.92
Avg.	43.33	50.61	-54.40	-164.54	59.62	73.68	15.74	-100.63

Many farmers, also, had substantial livestock operations that contributed to their farm income. Hogs have traditionally been known as "the mortgage lifters". Figure 6 exhibits net hog profits per cwt. The dashed line is returns for low cost producers and the solid line is the high cost producers. The old adage, "Good producers break-even in poor years and make money in the rest" is certainly clear. The situation has not been so fortunate for the high cost producers. Again, marketing at above average prices would alter the results. The point to remember is that when discussing financial conditions, one must know the "classification" of costs of the producer(s).

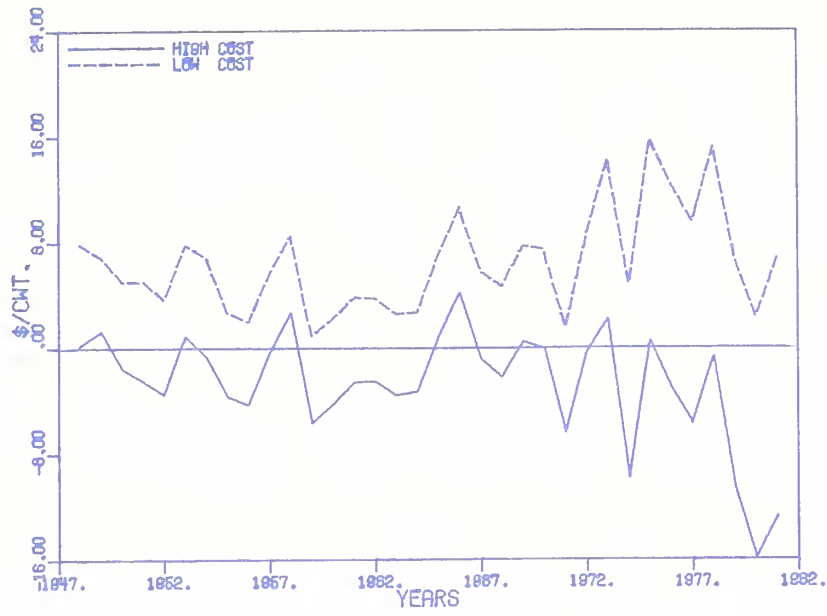
There are other factors which have affected farmers decisions, which then affect their profits and financial conditions. Some examples are:

- 1) The level and use of government loan and price support programs.
- 2) Interest of another family member in joining the farming operation. Farmers who had sons or sons-in-laws graduating from high school and/or college and wanted to farm particularly felt the "pressure to expand". If land wasn't available in the immediate area, or they felt the total investment too large, they often chose to expand by building specialized livestock facilities. With large debts, the specialized hog enterprise, for example, no longer was a business where you got "in and out" depending upon the profitability or expected profitability.
- 3) Estate planning considerations. Alternative use valuation for estate tax purposes made it desirable to own land instead of other assets. Thus, many farmers kept their land rather than sell it when they retired.
- 4) Weather
- 5) General economic conditions. While it became popular to complain at the local coffee shop about low prices, and foreign and outside investors bidding up the price of their land, farmers with efficient production knew farming was profitable. They were the major purchasers of land during the decade of the 70s. With the rapid increase in land values, those farmers that had some land base could "out bid" their non-land owner neighbors when bidding on cash rent and/or buying additional land. It became increasingly difficult for those without a land base to acquire the initial down payment to purchase land.

Two other prominent factors are interrelated. The first is tax considerations, and the second is increasing land values. Investment credit, additional 20 percent first year depreciation and fast depreciation often have tipped the scale in favor of machinery purchases and specialized livestock buildings and equipment. Through rapid expansion, many farm businesses could manage cash sales and continue to expand at a rate which minimized the amount of income tax paid.

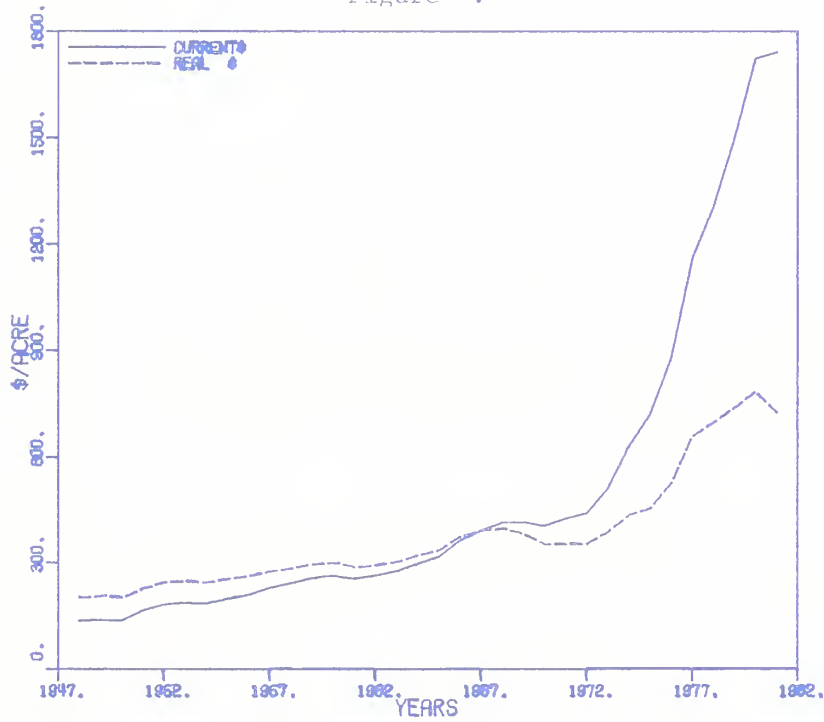
The key point is that all of the aforementioned can drastically affect the profit situation of a farmer without necessarily making him "worse off", and could, in fact, make him "better off".

Figure 6.



NET HOG PROFIT/CWT.

Figure 7.



INDIANA LAND PRICE/ACRE

The second factor, again, is the desire to gain "wealth" through increases in land values. Figure 7 exhibits the average price of land in Indiana from 1948 to 1981 in current and real dollars. The information presented in Figure 6 clearly shows the motivation farmers had for purchasing land.

Appreciation in land values has played a prominent role in business strategies of many farmers. Figures 8 and 9 present how a farmer may have looked at his profit picture over this time period using the "inflation game strategy". The dashed line is returns above all variable and fixed costs (land included). The solid line adds to that figure the appreciation in land values. The logic might go something like this -- the farmer buys land in anticipation of appreciation in value; as the value does go up, he borrows against its higher value to buy more land and/or machinery, or build more livestock facilities; and so on For example, an Indiana farmer who owned 320 acres experienced an average increase in land value of \$134,400 during the two years 1979 and 1980. The ever increasing land costs, though, drive up production costs and in a cash flow analysis, losses are experienced. But the farmer is willing to accept this knowing his land (and other assets) is going up in value, so his overall "economic" gain is positive -- and his net worth is increasing.

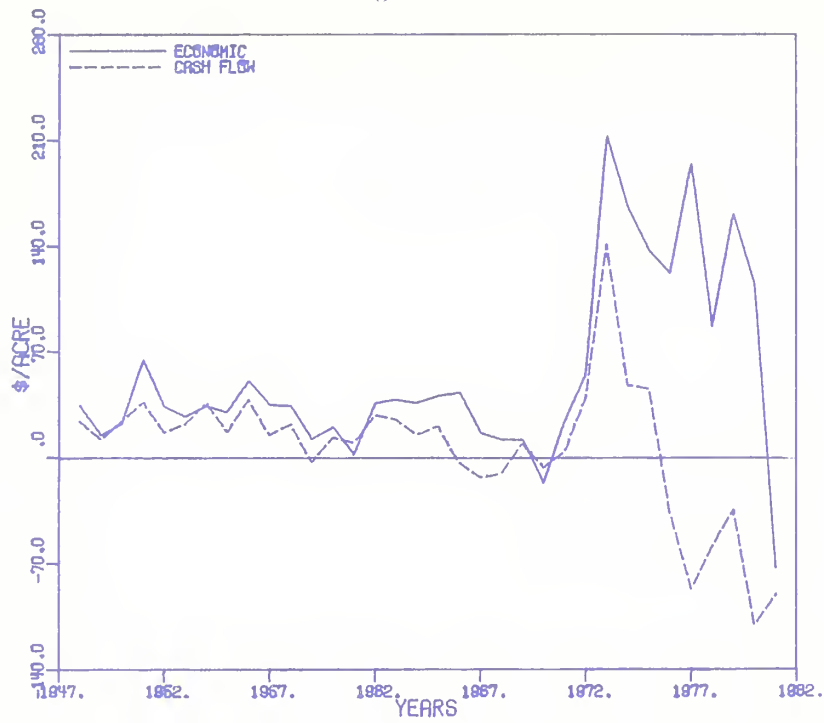
This strategy works well as long as the major asset -- land -- appreciates faster than the rate of interest on borrowed funds, and "friendly" lenders can be found to refinance and/or restructure the borrowings. Problems develop when the appreciation in value is outrun by interest costs. This presents a liquidity problem; -- not enough cash can be generated through earnings and borrowing to "keep the ball rolling".

As one can deduce from the previous discussion of "playing the inflation game", management of debt is critical to success. Integral to debt management is the "real" interest rate. Economists have observed a "rule of thumb" that indicates investors desire a real rate of return of about three percent in order to loan out their funds. This means they want a rate of interest that is about three percent above the current (or expected) rate of inflation. Figure 10 indicates they have erred in their estimates of inflation. With whatever measure of inflation one wishes to use, the nominal interest rate minus the inflation rate equals the real rate of interest. Interest paid is a deductible item for income tax purposes. Thus, for profitable farm businesses in high tax brackets, both the nominal rate and the real rate of interest were very low (or in fact negative in real terms) during most of the decade of the 1970s.

Therefore, 1981 is a crucial year for the most aggressive participants in the "land inflation game". Simply put, the increase in capital appreciation stopped, leaving the ever increasing cashflow problems to be dealt with. This has been compounded by the historically high real interest rates experienced during the past two years, shown in Figure 10.

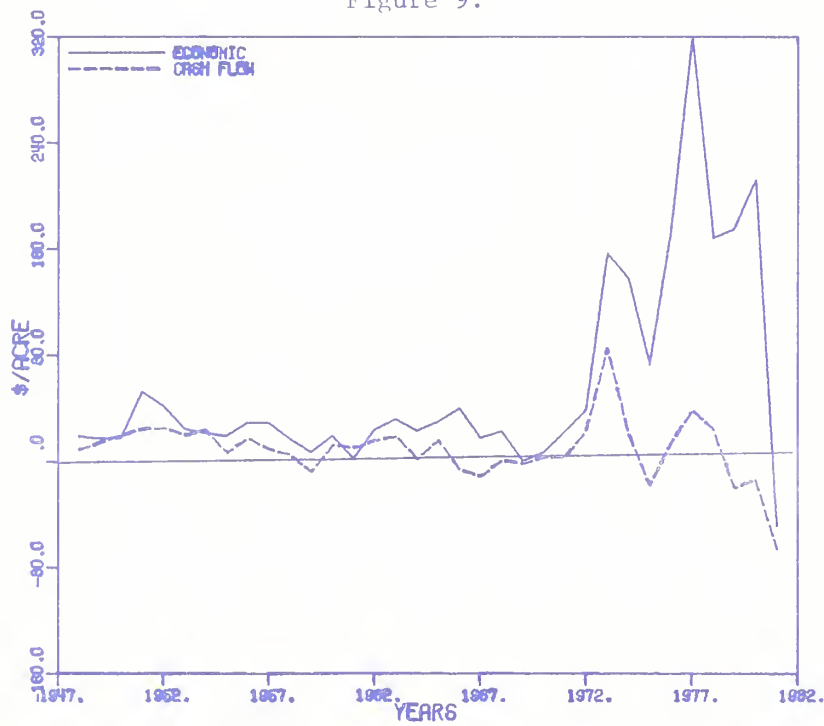
This paper makes no statement about how many farmers have, or will, experience this problem due to playing "the inflation game". The only point is that enough have played the "game" to make it a serious problem in various areas of the U.S., especially for "players" who were late entries into the "game". This can be compounded or reduced by production problems or gains, respectively.

Figure 3.



CORN RETURNS/ACRE

Figure 9.



SOYBEAN RETURNS/ACRE

Figure 10.

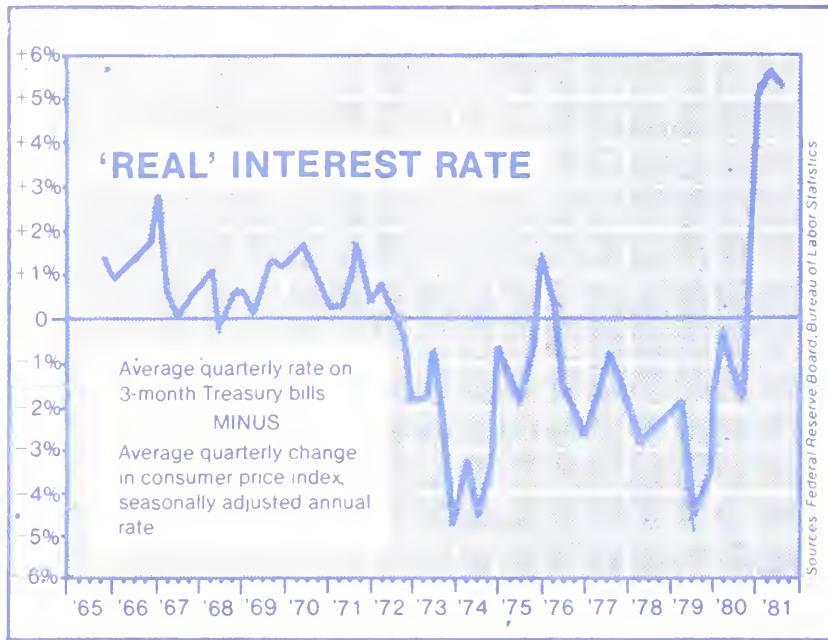
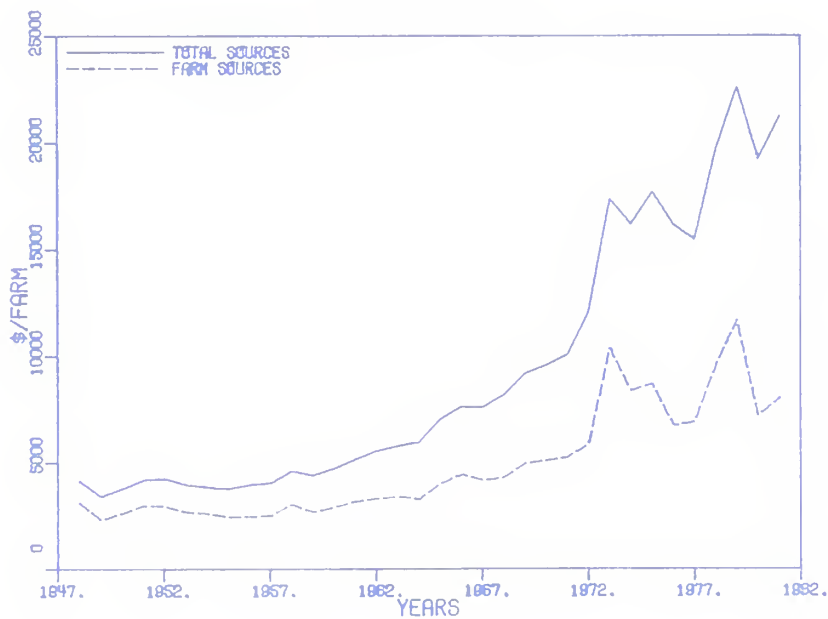
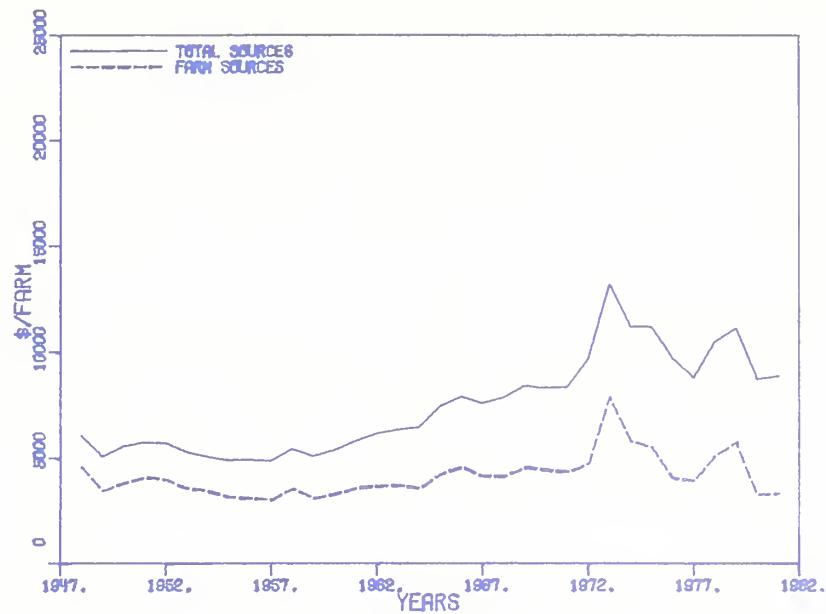


Figure 11.



U.S. AVG. PERSONAL INCOME/FARM

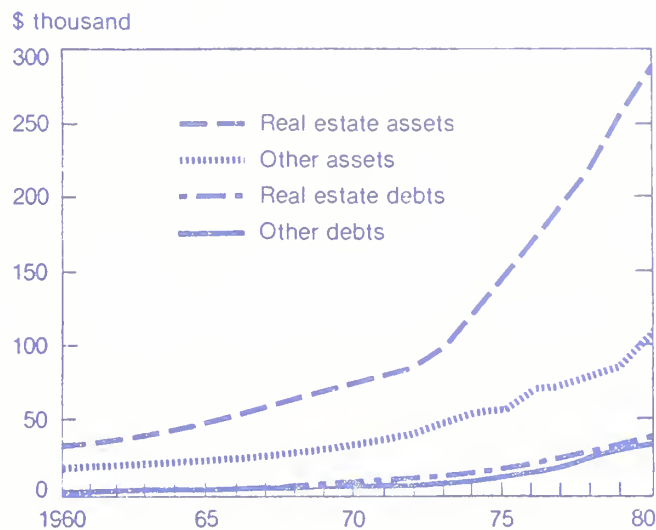
Figure 12.



U.S. AVG. PERSONAL INCOME/FARM
(REAL DOLLARS)

Figure 13.

Farm Assets and Debts per Farm



Data as of January 1, 1980 preliminary.

The tenant farmer who owns no land is apparently "worse off" financially than farmers who purchased land prior to 1977 because he does not share in the fruits of the "inflation game". He may currently be in "better" financial condition, as measured by cash flow, than those with high land costs. Tenants with a majority of their land leased under a cash rent arrangement, and who did not forward price grain, may also have cash flow difficulties.

The gloom associated with aggregate farm income, is moderated when viewed on a per farm basis and supplemented by non-farm income. Figure 11 summarizes the income picture for the last 34 years. Total U.S. average personal income per farm (solid line) and personal income per farm from farm sources (dashed line) is illustrated. The difference is income obtained from non-farm sources. This analysis ignores the structural distribution of income, but the general trends are apparent.

In current dollar terms, income from farm sources has grown slower and is more variable than total income per farm. This is due to the rapid growth in off-farm sources of income per farm. This helps explain how many farmers adjusted to the variability and relatively slow growth, at times, in income per farm from farm sources. If current farm incomes persist, one would expect farmers to try to increase non-farm earnings even more.

Figure 12 shows the same income figures in real dollar terms. It is not surprising to see the results. Total income per farm is back to the level of the late 60s and early 70s. But, income per farm from farm sources is similar, in real terms, to levels experienced in the 1950s.

The final consideration in determining farmers financial condition is what's happening to asset value. The average farm investment in farmland, livestock, machinery and other assets was \$400,000 per farm at the beginning of 1980. This was practically double that of 1975 and triple that average for 1970. Farm indebtedness showed a somewhat faster rate of growth, averaging \$68,200 per farm in 1980, up from \$32,900 in 1975 and \$18,000 in 1970. This indicates an increase of \$216,467 per farm increase in asset value -- over \$20,000 per year (average), as shown in Figure 13.

Summary

In conclusion, farmers have made significant gains in their net worth during the decade of the 70s. Those with illiquidity problems could sell off part of their assets and still be in relatively good financial condition -- perhaps much better than many other groups of citizens. That strategy is likely to be the "last choice". Off-farm employment and/or refinancing of debt is a more likely event.

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Over the last year there have been a number of important developments affecting the food and agricultural sector. The drought-reduced harvest of 1980 has been followed by a record grain crop this year; the 1980 restrictions on crop exports to the Soviet Union have been followed with the potential for record Soviet imports this year; the cattle cycle "bottomed out" in 1980 after several years of declining production and beef production now appears to be increasing; a severe decline in Gross National Product (GNP) made 1980 a recession year and it now seems that the same will be true for 1981; a January freeze in Florida pushed up domestic prices for fresh fruits and vegetables; a turn-around in world sugar production has caused a drastic fall in raw sugar prices; scheduled April dairy price support increases were eliminated; and a new farm bill is now taking its final form. All of these events have had and will continue to have important implications for food prices, food consumption, and consumer expenditures for food.

Our purpose today is to review the general implications of these and other events for the food sector. The plan of discussion is as follows. First, the linkage between developments in the agricultural sector and their impacts on the food sector will be briefly reviewed. The current food situation will then be summarized--particularly in light of the developments just described. Finally, the outlook for 1982 will be presented based on current crop prospects. The major focus will be on prices, since this is the major item of interest to producers, distributors, and consumers, but at the same time an attempt will be made to point out the major implications for food expenditures and consumption patterns of current and expected developments in the near future.

Farm and Food Sector Linkages

The food and agricultural system is usually depicted as consisting of two components: (1) the farm sector, consisting of markets for raw agricultural products, and (2) the food marketing sector, which consists of producer, wholesale, and retail markets for processed foods. Both of these sectors are crucially linked--what happens in one normally has an important impact on the other.

Farm Sector

The principal characteristics of the farm sector which distinguish it from other production sectors of the economy include: (1) the major role of weather as a determinant of production level; (2) the international dimension of markets for most raw agricultural products; and (3) the essentially competitive nature of markets for raw agricultural commodities, foodstuffs, and feedstuffs.

Weather is obviously the single most important factor influencing agricultural crop production. Summer drought in major crop producing areas can be disastrous. For example, in the dry summer of 1974, corn yields fell from more than 91 bushels per acre in the previous year to 72 bushels (a 10-year low); soybean yields declined from 28 to 24 bushels per acre (also a 10-year low); and wheat yields were off about 5 bushels to 27 bushels per acre (the lowest in 7 years). Last year's drought caused corn yields to decline to 91 bushels per acre--down from almost 110 in 1979 and the lowest since 1977. And soybean yields were off almost 5 bushels per acre last year--down from 32 bushels in 1979--and the lowest since 1976.

Meat production is also affected by weather extremes. Significant heat in summer can result in poultry death loss (this happened last year), while severe cold in winter often kills range animals, reduces breeding efficiency, and limits weight gains. Vegetable production, particularly in California, Florida, and Texas, is sensitive to periods of prolonged heavy rains, while winter fruit and vegetable production in Florida is sometimes drastically reduced by freezes.

International events, whether political or natural, can also have a substantial influence on domestic markets for farm products. World Bank decisions to finance agricultural production, feedstuffs manufacturing, or food processing in other areas of the world sometimes dampen demand for domestic food and agricultural products. Similarly, high Japanese and European tariffs on processed foodstuffs imports stimulate U.S. exports of raw agricultural products, but discourage processed foodstuffs exports. And, of course, bad weather in any large crop-producing country or foreign political decisions to limit trade causes international and domestic prices for agricultural products to rise.

The existence of competition in the farm sector, with many buyers and sellers of nearly homogeneous products, also has important implications for domestic agriculture. Unlike markets in many other sectors of the economy, which may be oligopolistic or monopolistically competitive, domestic agricultural markets come closest to being purely competitive. Thus economic profits in the industry vary over time around a normal rate--there may be several "good" years when farm income and prices are high, followed by several "bad" years when prices and farm income are low. Traditionally, good years for farmers are bad for consumers and usually give rise to demands for government action to offset high food prices. Similarly, bad years for farmers generate demands for higher support prices and other forms of assistance designed to increase farm income.

Food Marketing Sector

Raw food products normally must be transformed into the appropriate edible form and transported to major population centers for consumption. Sometimes, as in the case of most fresh fruits and vegetables, little processing is required and the basic marketing function is simply one of transportation and retail sale. In other instances, as for cereals and bakery products, a substantial amount of processing is necessary to produce the final consumer product. Regardless, inputs and services must be purchased for transforming raw foodstuffs and transporting them to market. Food manufacturers, wholesalers, and retailers provide these additional inputs and services, and hence are a vital link in the supply of food to consumers.

The important role of food manufacturers, wholesalers, and retailers is apparent if the value of food purchased at retail is divided into shares by type of cost. In 1980, 32 percent of consumer expenditures on domestically produced food went to farmers for raw foodstuffs; 30 percent went to cover labor costs; 8 percent for packaging; 5 percent for intercity transportation; 3 percent for fuel and electricity; 4 percent for before-tax profits; and 18 percent for other costs such as advertising and rent. The "farm value" of a consumer dollar spent at grocery stores was about 37 cents in 1980, while only 20 cents of a dollar spent on meals consumed at restaurants, cafeterias, and fast-food chains went to farmers. These percentages will be about the same this year and have been fairly stable over the last decade.

Dynamics

Though the contribution of the food marketing sector to national product is far greater than that of the farm sector, the basic source of food system instability lies within the farm sector. In particular, variations in farm-level supplies and prices directly cause most of the variations in food consumption and retail food prices--a consequence of weather perturbations, international market disruptions, and market competition which so vitally influence domestic markets for farm products. Resource employment and input prices in the food marketing sector are simply more stable than farm sector variables.

This leads to a perspective of the food sector in which changes in farm-level supply are the primary determinants of changes in retail food consumption and prices. But changes at the farm level do not affect retail markets immediately. Normally there is a lag before reduced supplies and higher prices at the farm level are translated into lower supplies and higher prices at retail. For example, heavy rains in California may cause an immediate reduction in the lettuce harvest, causing higher shipping-point prices. But it will be approximately a week before these increases show up at retail in eastern cities--it takes time to transport lettuce and transmit higher prices through the different stages of the marketing chain. For manufactured food products this time lag may be lengthy. Higher wheat prices may not be fully reflected in the retail price of bread for 6 months. And higher corn prices may not affect retail food prices until an even longer period has elapsed--higher corn prices today cause meat producers to cut back on future production, but this has virtually no impact on current production that was planned many months ago.

Food Market Developments in 1981

Despite reduced crop yields last year and higher feed prices, meat production this year has run substantially ahead of expectations, resulting in lower farm and retail meat prices than had been anticipated. Similarly, production of dairy products, and sugar and sweeteners has increased more than anticipated, stimulating greater consumption and lower prices than expected. In contrast, the January freeze in Florida forced up vegetable and fruit juice prices significantly in response to crop damage.

Meats

Commercial beef production increased about 5 percent above the 1980 level during the first half of 1981 and it now appears that beef production will rise slightly for the year. Increased beef production, along with a rise in veal production and a slight increase in lamb and mutton production, have been offset by a 6 percent decline in pork production, causing 1981 total red meat production to be only slightly above 1980's level thus far. But given population increases, it is apparent that per capita red meat consumption has declined this year.

Retail prices for most major meat products fell from January through May but have increased since then. The Consumer Price Index (CPI) for beef and veal was down 1.8 percent over the first part of the year; the CPI for pork declined 4.8 percent; while the CPI for poultry was off 3.8 percent. At the farm level, cattle prices were up 3.5 percent from January to May (although prices were lower in February and March); hog prices were down 3.0 percent; and live broiler prices declined 4.9 percent. These declines are all largely attributable to increased cattle slaughter in the first half which substantially depressed prices for beef and other meats at retail. But from May through September, retail beef prices rose 2.5 percent; retail pork prices were up 9.6 percent; and retail poultry prices increased 2.6 percent in response to generally lower supplies.

Poultry and Eggs

Poultry production has continued to expand this year and it appears that per capita consumption will exceed 61 pounds--the highest level ever and a continuation of the post-war trend towards a rapid expansion of the chicken and turkey processing industry. Increased chicken consumption in recent years has been strongly supported by brand merchandising and the spread of specialized fast-food restaurants. Grocery store prices for poultry will rise only about 5 percent this year, while prices for pork and fish will rise 9 to 10 percent at retail. Thus, poultry will be a better buy for consumers relative to pork and fish.

In contrast, egg production will be down again for the second consecutive year and consumption will likely fall substantially below 35 pounds per capita--the lowest level in the post-war era. Retail egg prices have risen only about 7 percent this year--less than prices for most other foods--but increased competition from other high-protein foods and continued dietary concerns about cholesterol apparently continue to have a negative influence on the demand for eggs.

Dairy Products

Thus far in 1981 milk production has increased over 3 percent above the comparable 1980 level. Output per cow is averaging 25 pounds more than last year and the number of producing milk cows has increased about 1 percent. Output of most dairy products is above last year's level, as well. Importantly, cold storage stocks of butter in public and private coolers are now 60 percent above last year's level, while cheese stocks in cold storage are up 13 percent. This is largely a consequence of the dairy price support program which encourages expanded production.

The decision to abandon scheduled April 1 increases in price supports resulted in virtually no movement in retail prices for dairy products through the summer months. Relatively large stock levels and continued large production were the principal restraining factors, but continuing declines in demand for dairy products (due to the increased availability of no-cholesterol substitutes and a relatively smaller youth population) also may have been important.

Sugar and Sweets

There has been a virtual collapse of sugar prices this year. In October and November 1980 the price of raw sugar at New York peaked above 40 cents per pound. In February this year, prices were down to 25 cents, and by mid-summer had fallen below 18 cents per pound. Two factors were primarily responsible: (1) increased production of high-fructose corn syrup, which food manufacturers increasingly substitute for refined sugar; and (2) increased world sugar cane production, which recovered this year in response to the initial burst of high sugar prices in late 1979.

The decline in raw sugar prices has been an important factor holding down retail prices for consumer packages of sugar, desserts, ice cream, and soft drinks. The CPI for sugar and sweets has fallen more than 6 percent since January, while retail prices for soft drinks, ice cream, and other foods containing sugar have increased only moderately.

Fruits and Vegetables

The major effect of the mid-January Florida freeze was to drive up the price of orange juice and orange juice concentrate, and to substantially reduce domestic availability of tomatoes in late winter and early spring. With respect to orange juice, the freeze caused higher January production and lower production in later months. Initially, frozen orange juice concentrate prices rose only slightly, from \$1.12 per 16 ounces in December to \$1.14 in January. But in February, March, and April, U.S. average retail prices for frozen orange juice concentrate increased significantly, reaching \$1.43 in May and have remained approximately at this level.

Tomato production, consumption, and prices were similarly affected. Prior to the freeze, 30 pound cartons of Florida tomatoes sold for about \$11.00. After the freeze, prices rose to \$15.00 per carton. But because young plants were damaged, tomato yields fell drastically in February and March, and grower prices rose even more. At retail, the U.S. average price of tomatoes per pound increased from 66 cents in December to \$1.20 in April. In May, however, yields from February plantings began to reach consumers and the retail price of tomatoes fell to 61 cents per pound.

Fish and Imported Foods

Per capita fish consumption appears to be running at last year's level of almost 17 pounds, a continuation of a pattern of stable consumption dating back over the last decade. Retail prices for canned fish and seafood have increased less than prices for most other foods over the last year--only 5.8 percent--but prices for fresh and frozen fish have risen 9.4 percent--more than grocery store prices for beef, poultry, and eggs.

Retail coffee prices have declined substantially over the last year--nearly 20 percent for some types--largely in response to increasing international supplies. Although per capita coffee consumption may rise, it has trended downward over the last three decades. In recent years cocoa and tea consumption have also declined. With increased domestic consumption of canned and frozen fruit juice and beverage milk, the importance of imported beverages may continue to decline in the future, unless relative prices change fundamentally.

Food Marketing Costs

Marketing costs account for almost two-thirds of every consumer dollar spent on food. For this reason, changes in marketing costs are important determinants of retail food prices. Available data indicate that prices for marketing inputs will rise about 12 percent this year, directly accounting for most of the increase in retail food prices.

Food sector labor costs are expected to average 10 to 11 percent higher this year, primarily because of an 11 percent increase in food retailing wages. Rising retail wages are principally due to cost of living adjustments (COLAs) and deferred wage increases provided by many union contracts. Larger payments for employee benefits, greater employer contributions to Social Security, and increases in the minimum wage have also added to labor costs.

Prices for packaging materials used in food manufacturing and processing will average only about 7 percent above last year's level. Increases have been held down by lower prices for polyethylene resin--the major material used in plastic containers and packages--and is a consequence of over-capacity in the plastic container industry. Lower prices for plastics have also partly offset a 13 percent increase in glass container prices, attributable to a significant boost in industry labor costs since the spring of 1980 when a three-year labor agreement was negotiated. In addition, rising production costs have contributed to a 10 percent rise in paper and paperboard prices.

Transportation costs have also increased substantially and will rise about 13 percent above 1980's level. General rate hikes and fuel surcharges to cover higher operating expenses have been primarily responsible. In addition, because of crude oil price increases last fall and decontrol of domestic crude oil prices earlier this year, diesel and fuel oil prices have risen 26 percent. Electricity and natural gas prices have risen 14 percent, but coal prices are up only 6 percent.

Consumer Expenditures

Real per capita consumer expenditures on food purchased at grocery stores rose over the first three quarters of the year--expenditures totaled \$492 (1972 dollars) in the first quarter, up about 1.2 percent from the fourth quarter of 1980, then rose 2.7 percent in the second quarter, and 0.5 percent in the third. These increases were largely attributable to increased demand for food at grocery stores--consumers ate at home more often in response to lower income in the second and third quarters--and to increased expenditures on meats as low prices stimulated purchases. For the year, real expenditures on food at grocery stores will rise about 1 percent above 1980's level.

In contrast, real per capita consumer expenditures on food purchased for on-premises consumption (at restaurants, cafeterias, and fast-food establishments) have declined significantly since the first quarter. On-premises expenditures fell 2.1 percent from \$171 in the first quarter to \$167 in the second, then fell another 1.7 percent in the third quarter as demand continued to decline. With a further reduction in demand possible in the fourth quarter, annual on-premises expenditures for all of 1981 may fall below 1980's level of \$165.

Outlook for 1982

This year's record corn crop will obviously hold down feeding costs next year, providing some stimulus for increased beef and poultry production. Increases will be small, however, as continued high interest rates discourage feedlot placements. Pork production will likely decline from this year's level as producers continue to react to losses experienced over much of 1981. Given current projected population increases, higher per capita beef and poultry consumption will be more than offset by declining pork consumption, leading to a small decrease in total domestic meat consumption. Increased beef and poultry supplies will limit price increases for these foods in 1982, while the decline in pork production may lead to double-digit increases in prices for porkchops, ham, sausage, and other pork products.

Egg production will also likely decline in 1982 as consumers continue to purchase alternative high-protein foods. Consequently, retail egg prices are expected to rise less than prices for most other foods. Cheese consumption is expected to increase, following recent trends. Butter consumption may rise, as well, in response to record-level carryover stocks from this year. The ultimate increase in retail prices for dairy products depends on action taken regarding the dairy price support program, however, but large stocks of dairy products will probably hold increases in dairy product prices below the average rate of increase for all foods.

Fresh fruit production this fall has been lower than last year. The fall apple harvest was small in the Northeast and Great Lakes regions because of cold weather last spring, and production of pears and grapes this year has also been lower. A larger Florida citrus crop is likely this winter as high juice yields compensate for tree damage during last January's freeze. But over-all, smaller supplies could lead to an increase in farm-level prices of fresh fruits exceeding 10 percent.

In contrast, farm-level prices for fresh vegetables are expected to be lower next year as potato production recovers from the low levels of the last two years. In addition, dry edible beans production will probably be the largest ever. Lower contracted acreage for processed vegetables--especially tomatoes--will have a positive effect on prices for processed fruits and vegetables. But large carry-over stocks of canned fruit and larger production of Florida frozen concentrate orange juice will moderate general retail price increases for processed fruits and vegetables.

Other farm-level and crude foodstuffs prices are not expected to rise much in 1982. Record wheat and rice crops will keep farm-level prices for these products low. Large carry-overs of vegetable oil, large soybean and peanut

crops, and a continued recovery in world sugar cane production will keep prices for oils and sugar low. Thus, relatively large supplies of raw foods and foodstuffs will generally limit cost-push from the farm sector in 1982 and the farm value of domestic food production will probably rise only about 1 to 4 percent. In stark contrast, food marketing costs will rise significantly and be the major source of food price inflation in 1982.

The most important factor contributing to higher food marketing costs next year will be rising employee compensation in the food sector--nearly half of all food marketing costs are employee wages and benefits. So far this year labor costs have averaged 10.9 percent higher than last year. But several factors suggest a slowing of labor cost increases in 1982, with a 9 to 10 percent rise likely. One factor limiting labor cost increases next year is the absence of an upward shift in minimum wages. This follows 4 years of successive scheduled increases and will particularly affect the food service industry. Also, increases in employer contributions to Social Security will be much smaller than this year's.

In addition, major collective bargaining contracts covering 315,000 workers in food retailing and manufacturing are to be renegotiated in 1982--up from 280,000 workers in 1981. The largest contracts to be renegotiated involve the meat-packing industry and the California fruit and vegetable processing industry. Retail clerk and meatcutter contracts in many metropolitan areas will also be renegotiated throughout 1982. Importantly, only moderate wage demands are expected when negotiations occur, largely because of the relatively low inflation rate over the last half of 1981 and the anticipated slow growth in the economy during early 1982. The slowing inflation rate will also mean smaller cost-of-living wage adjustments.

Regarding other food marketing costs, prices for packaging materials and containers are expected to increase 7 to 8 percent in 1982, close to the 1981 increase. Prices for paperboard and paper products are expected to rise 9 to 10 percent, in response to higher manufacturing costs. However, smaller price increases are likely for metal, glass, and plastic containers. Competition is increasing in the container industry because of the ease of product substitution, the low rate of plant capacity utilization, and the trend for food manufacturing firms to produce their own containers.

Energy costs to food manufacturers and retailers are expected to rise at approximately the general inflation rate, although small increases in prices for petroleum products will be a restraining factor. World petroleum supplies are large and petroleum demand is expected to decline because of slow economic growth and increased substitution of alternative fuels. Coal prices will likely rise more than the inflation rate, primarily because of increased demand and higher labor costs resulting from this year's collective bargaining agreement with the United Mine Workers. Higher coal prices and increasing financing costs will push electricity prices up in real terms. Natural gas prices will move up substantially as a consequence of decontrol--the Natural Gas Policy Act of 1978 allows wellhead prices to rise and much of the resulting increase will be passed through to final users.

Food product transportation costs are expected to increase 10 to 14 percent in 1982. Rail freight charges will rise faster than inflation as rates are adjusted to reach an "adequate revenue" level as specified in the

Staggers Act of 1980. Additionally, the less restrictive regulatory environment will permit surcharges to cover higher costs for deliveries on low volume lines. Trucking rates will increase with rising fuel prices, but increases will be limited by more competition resulting from a loosening of industry regulations. Collective bargaining agreements with the Teamsters also will be important in determining trucking rates.

In brief, substantial increases in food marketing costs, which in total may rise 8 to 10 percent, combined with nominal increases in farm-level prices, implies an over-all increase in grocery store prices of 5 to 8 percent with a 6 percent rise being most likely. Prices at restaurants, cafeterias, and fast-food chains are expected to rise 8 percent next year as the economy recovers from the current recession and consumer demand increases. Combined with a 6 percent increase in prices for food purchased at grocery stores, retail prices for all food will probably increase about 7 percent in 1982. This is below 1981's expected increase of 8.2 percent and represents a significant decline from the double-digit increases of 1978 and 1979 (see table 1).

Total food consumption in 1982 is expected to increase slightly, largely because of increased production of cereals, beef, dairy products, and fresh vegetables (see table 2). Combined with a lower rate of increase in food prices compared with nonfood prices, this implies that real consumer expenditures on food purchased for home use will probably remain about the same next year. In contrast, real per capita consumer expenditures on food purchased for consumption at restaurants, cafeterias, and fast-food chains are likely to rise, mostly in response to increased disposable income in the latter part of the year.

Forecast Sensitivity

The food price, consumption, and expenditures outlook presented here is a cumulative product, derived from individual commodity analysts' forecasts of production, consumption, and prices, and other analysts' forecasts of food marketing costs and macroeconomic aggregates. These predictions, made judgmentally and through the use of econometric models, are aggregated into an over-all food CPI forecast using an econometric model developed by Lamm and Westcott, while an over-all estimate of aggregate food consumption is obtained by using price weights to obtain a Laspeyres quantity index. Conclusions about the expected change in consumer food expenditures can then be inferred directly.

Except in years of unexpected large exports or significant weather damage to crops, aggregate food consumption is fairly easy to forecast. Record-large grain carry-over and large stocks of dairy products virtually guarantee an increase in food consumption next year, for example. Retail food prices are more difficult to forecast, however, largely for two reasons. First, there is substantial uncertainty regarding future farm-level prices. A small change in supply can cause a large change in price. Unanticipated changes in supply usually arise from adverse weather conditions--which are virtually impossible to predict. Second, there is uncertainty regarding future changes in food marketing costs. Although food marketing costs normally parallel changes in the general price level, it is no simple task to forecast such changes a year ahead. For this reason, the 1982 forecasts presented here are conditional on normal weather and a 9 percent increase in food marketing costs.

Given the assumptions about farm-level prices and food marketing costs for 1982, a 50 percent statistical confidence limit around the 7 percent point forecast would be approximately 5 to 9 percent. Thus, for example, it would take a combination of extremely poor weather, larger-than-expected export demand, and greater-than-anticipated food marketing cost inflation, to push retail food prices above the upper bound of this interval. Extremely good weather, low export demand, and a lower rate of cost inflation would be necessary to push the actual change in retail food prices below the lower limit.

Summary

The farm and the food marketing sectors are complex and vitally linked. Developments in the farm sector impact directly on the food marketing sector and events in the food sector influence activity in the farm sector. Indications this year are that per capita food consumption will decline, largely because of reductions in production of pork, eggs, and fruits and vegetables; retail food prices will rise a little more than 8 percent--less than the increase in the CPI for the third consecutive year.

In 1982, per capita food consumption is expected to rise as production of cereals, beef, dairy products, and fresh vegetables expands significantly. Retail food prices will increase about 7 percent within a 5 to 9 percent confidence interval, mostly as a consequence of higher prices at restaurants, cafeterias, and fast-food establishments, and because of higher prices for pork, other prepared foods, and processed fruits and vegetables. Real per capita food expenditures will remain approximately at this year's level.

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Table 1. Changes in the CPI for Food: 1978 through 1981 and 1982 Forecasts

Component	Relative importance in food CPI	Change in				
		1978	1979	1980	1981 (Prelim- inary)	1982 (Fore- cast)
Food	100.0	10.0	10.9	8.6	8.2	7
Food away from home	30.7	9.0	11.2	9.9	9.3	8
Food at home	69.3	10.5	10.8	8.0	7.8	6
Cereals and bakery products	8.7	8.9	10.1	11.9	10.2	7-8
Beef and veal	9.8	22.9	27.3	5.7	1.8	5-7
Pork	4.7	12.9	1.5	-3.4	9.8	8-11
Other meats	3.0	17.8	14.7	3.8	5.0	6-7
Poultry	2.3	10.3	5.0	5.1	5.5	3-5
Fish and seafood	2.3	9.5	9.8	9.2	8.9	8-9
Eggs	1.3	-5.5	9.5	-1.8	7.8	4-5
Dairy products	9.3	6.7	11.6	9.8	7.5	4-5
Fresh fruits	2.4	19.4	12.4	6.2	5.3	8-9
Fresh vegetables	2.8	7.9	2.9	8.9	20.1	-1-0
Processed fruits and vegetables	4.5	10.5	8.6	7.0	12.2	9-10
Sugar and sweets	2.9	12.2	7.8	22.9	8.2	2-3
Fats and oils	1.9	9.5	8.0	6.6	11.5	5-6
Nonalcoholic beverages	7.6	5.7	5.0	10.6	4.1	2-3
Other prepared foods	5.8	8.0	10.1	10.8	10.5	9-10

Data for 1978, 1979, and 1980 are from the Bureau of Labor Statistics.

Table 2. Changes in Per Capita Consumption of Major Food Products, 1978 through 1981 and 1982 Forecasts

Food group	1980 consumption in pounds (retail weight)	Change in				
		1978	1979	1980	1981 (Prelim- inary)	1982 (Fore- cast)
--Percent--						
All food	1408	-0.4	0.8	-0.9	-1.4	1
Cereals and bakery products	150	-1.1	3.8	-0.5	0.7	1
Beef and veal	78	-5.7	-10.9	-2.3	0.4	2-3
Pork	68	0.2	14.1	7.1	-7.0	-6
Poultry	61	4.7	8.4	0.2	2.0	0
Eggs	35	1.8	2.0	-2.0	-3.4	-2
Dairy products	308	0.4	-0.6	-3.0	0.0	1
Fresh fruits	84	-1.8	3.4	4.0	-3.0	1
Fresh vegetables	207	-0.7	1.9	0.9	-3.0	5
Processed fruits and vegetables	142	0.9	1.5	-2.8	-1.5	-5
Sugar and sweets	133	0.7	1.5	-2.7	-2.0	1-2
Fats and oils	55	3.4	2.5	0.4	-0.8	1-2
Nonalcoholic beverages	11	7.7	3.7	-5.0	3.6	1

The food groups are approximately equivalent to the corresponding CPI classifications.

Lew Norwood, National Association of Retail Grocers

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The previous speakers have projected...that relatively large supplies of raw foods and food stuffs will generally limit cost-push from the farm sector in 1982 and the farm value of domestic food production will probably rise only about 1 to 4 percent. In stark contrast, food marketing costs will rise significantly and be the major source of food price inflation in 1982. Food marketing costs may rise 8-10% next year, increasing grocery store prices an average of 6 percent.

My charge, as I understand it, is to discuss my views of the food supply, demand and price outlook, particularly from the standpoint of factors affecting the outlook beyond the farm level.

Quite frankly, I feel a little inadequate in responding for the total food marketing segment...manufacturers, wholesalers and food retailers. In fact, I'm still smarting from a paper that I wrote in 1969 about the Future of the Independent Food Retailer in the 70's. Although I wasn't alone in overlooking the energy crisis, that omission and several others didn't cause any stampede to my door for forecasting the 80's.

I'm willing to accept the 1 to 4 percent increase in the farm value of domestic food production and I'm pleased that the weather, international and domestic conditions look favorable for 1982, as well as the competitive nature of the markets. The ability of American farmers to produce will benefit consumers, even though the prices farmers receive may not make 1982 a good year for farmers.

I'm also willing to accept the 8-10% increase in food marketing costs with an increase in grocery store prices of 6 percent. In a year that inflation is projected to continue at 8-10%...it would seem that the previous speakers might have used less emotional words than "in stark contrast" marketing costs will be 8-10% in 1982.

It's words like that which make good lead statements for news articles to pin the tail on the bad guys...the marketers or the ever elusive middle man that is gouging consumers.

In all fairness, the speakers did, however, pinpoint the important factors that will contribute to the higher food marketing costs next year.

The most important factor contributing to higher food costs will be rising employee compensation...nearly half of all food marketing costs are employee wages and benefits. I recently analyzed a group of NARGUS member stores and found wages and benefits represented 57% of total expenses for operating food stores.

I was interested in noting that the USDA is projecting a slowing of labor increases in 1982 to a 9-10% rise due to an absence of upward shift in minimum wage and smaller increases in employer contributions to Social Security. They also predicted that only moderate wage demands are expected when labor-management negotiations occur in 1982. Also, the slowing of the inflation rate will mean smaller cost-of-living wage adjustments.

I'm certainly in agreement with the projections for reduced labor cost increases, but we would hope too, that improvements in labor productivity will also contribute to reduced labor costs.

Chairman of the NARGUS Board of Directors, Jim Stoll, is taking the Improving Productivity message to NARGUS members all across the nation. In his message, he points out that by setting standards at higher but attainable levels it is possible to get better productivity. He points out that the most important time spent by a store manager is time spent scheduling labor - utilizing hard facts and real measures of productivity. Jim uses the Targeting Scheduling Program...that schedules the jobs to be done and know in advance how long it should take to accomplish it. He also uses true measures of productivity...such as cases per hour or pounds or packages per hour - measures not influenced by inflation.

Jim, like many of our members, is being aided in his push for improved labor productivity by scanning/computer systems. We have been telling our members and the wholesalers that supply them, that if they don't move into the computer age, they are going to be operating at a competitive disadvantage. I see the computers not only improving labor productivity, but also improving decisions related to store location, capital investments, store positioning, space allocations, product locations, energy, shrink and inventory management, product pricing, advertising and promotions, additions and deletions, plus many others.

One of the high labor cost areas of food stores is the meat department, and if you put your ear close to the ground, I believe you can hear some rumbling going on. I'm sure that many of you know that nearly 20 years ago, the USDA established that central packaging of retail cuts of meats was both technically and economically feasible. Many attempts were made but few were successful. We all know that timing is all important. It appears that the time is now right for centrally packaged meat. Scanning -- at the checkout and at the back door -- will remove much of the mystery from the meat department and provide facts for decision making. My guess is that red meat will follow the lead of poultry with most of the processing moving out of the retail store. Boneless pork products seem to be leading the way and beef will be close behind. Rumor has it that a big box beef processor is getting ready to go with centrally retail packaged meat.

Energy, packaging and transportation costs were also mentioned as other major contributors to marketing costs. Now that energy costs have passed rent in many stores as an expense, it's attracted the attention of marketers, especially food retailers. Although the computerized "black boxes" and heat reclaim systems are getting a lot of publicity, many retailers are finding that some common sense actions like putting doors and strips on frozen and refrigerated cases, improved maintenance

practices, better control of lights, doors and insulation are paying off. Yes, many store managers are now reading their energy bills as if they were their profit and loss statements and taking corrective action. I see energy rates moving constantly up. My objective for the food industry is to keep energy costs under control.

As to the 10-14% transportation increases...certainly the USDA research recommending consolidation of vendor items to food stores is most timely. Although it's recognized that vendors gain merchandising advantages by direct shipment to stores, the cost disadvantages appear to be rapidly outweighing the advantages. Although as stated rail charges will probably rise faster than inflation, it's expected that the reduction in regulatory restrictions, including the allowance of backhauls, and more efficient scheduling and servicing of retail food stores, as well as improved transportation equipment, and greater standardization of shipping containers, should help to offset rising fuel prices and labor costs in the trucking of food.

As to packaging and container costs of 7-8%, I see no drastic changes from the rate projected in 1982. I do, however, see some radical changes ahead as the retortable pouch and aseptic packages challenge frozen and refrigerated products for space in retail stores and the shopping bag of consumers.

In a session of this type, I've often had the feeling we were trying to identify the good guys and the bad guys. In the presentations today, I've felt that maybe we were all trying to determine "how we can provide an adequate supply of safe and nutritious food and desired services to consumers at prices that reflect a true value at a minimum expenditure of resources." You know, may be we can eventually emulate the Japanese and have business - government - consumers work together to achieve an agreed-upon food and agriculture industry mission.



Summary

Despite current prospects for record world 1981/82 cotton production and supplies, slow textile activity by many major cotton users could hold back consumption levels. Projected August 1, 1982 carryover stocks are expected to be heavy and currently forecast at 25.6 million bales, the largest level in seven years. The principal increase is anticipated U.S. stocks reflecting the large 1981 crop estimated at 15.5 million bales.

Production

World cotton production has fluctuated, but kept an upward push for the last 35 years. Production surpassed 40 million bales in the 1950's, 50 million bales in the 1960's, and 60 million bales in the 1970's. The 1970's saw world production go from around 53.5 million bales to an all time high of over 70 million bales this year. Foreign production during this period has steadily increased from 43.5 million bales to a record high of 55.4 million this year. The increased production has been concentrated in the Western Hemisphere and Asia.

African cotton production declined during the past decade. Production in Egypt was relatively stable. New higher yielding varieties there have allowed a decline in area while holding steady production. Egypt is currently conducting test production of upland cotton in its desert area. If the test is successful and the cotton proves acceptable to Egyptian mills, Egypt plans to introduce its production in the desert for domestic utilization. This would allow a shifting of some long staple cotton from domestic use to export. No additional land is available for cotton expansion in traditional areas. Sudanese cotton production declined sharply throughout this period.

In the Western Hemisphere, production gains were made by the United States which had declined in the latter half of the 1960's and in Central America until its political problems interfered with production levels. Total Western Hemisphere production increased from 16.3 million bales in 1970/71 to a preliminary 22.9 million in 1981/82.

Asian cotton production increases were principally in the USSR and China with lesser increases in India and Pakistan. From 1970/71 to 1981/82, Russian production increased 27 percent and Chinese production 45 percent. Both countries increased area and yields during this period through the use of improved varieties and more effective use of technology.

Some reports indicate that long run irrigation water supply problems in Soviet production areas will not allow major increases in cotton area. In India and Pakistan gains were smaller. Both showed a significant increase from 1970 to 1971 but since then have shown modest increase of 8 and 11 percent, respectively.

As indicated earlier, current prospects indicate record 1981/82 world cotton production of 70.9 million bales, 8 percent above last year. Major producers showing significant gains are the United States (up 39 percent), China (up 7 percent), India (up 4 percent) and Pakistan (up 10 percent). Keith Collins will discuss U.S. prospects in greater detail, but I will add that the United States accounts for 80 percent of the increase. China, India and Pakistan all expect record crops. Reports indicate yield prospects are promising in Northern China and overall China is having a better harvest than last year. China reports cotton purchases are ahead of a year ago and the crop is beyond the stage where weather could be a problem. Current estimates place the Chinese crop at 2.9 million tons or 13.3 million bales. India reported that cotton growing conditions were good to excellent in most producing states. Outturn in India's Northern Cotton Belt and parts of the Mid-Western cotton region have not met preliminary projections, but total Indian production is expected to reach 6.4 million bales. The Pakistani government increased cotton producer incentives through a higher support price and increased certified cotton seed and fertilizer distribution. Pakistani production is estimated at 3.6 million bales. Production in Turkey is estimated at 2.3 million bales, up 3 percent. The USSR, Egypt and Brazil expect large 1981 crops, but less than last year. Most Soviet cotton producing areas report warm dry weather but the crop has been late in maturing. The USSR crop is currently estimated at 13.7 million bales. Reports on the Egyptian crop have been favorable, although cool temperatures in early September delayed crop development slightly. While the area planted in Brazil is up, yields are expected to be down. Output is estimated at 2.7 million bales, down 4 percent. The Mexican crop is expected to be down nearly 100,000 bales and total 1.5 million because of heavy continuous rains during the summer in Northwest Mexico. The rain reduced yields and caused discoloration. The heavy rain was particularly damaging during the July harvest in Sinaloa.

Consumption

In spite of a record cotton consumption level in 1980/81, almost every major consuming country in the world found its textile sector in a depressed state. The 1980/81 consumption record was due solely to increased use levels in the People's Republic of China and the Soviet Union. Elsewhere, poor economic conditions, including high interest rates, rising energy costs and in many cases, higher unit wage costs were coupled with reduced demand for textile output during 1980/81. Throughout the decade of the 70's world cotton consumption grew at a robust rate, particularly in the developing countries of Asia, Africa and South America. However, this growth began to slow toward the end of the decade and market year 1980/81 witnessed very little growth in cotton utilization outside the PRC and USSR. 1981/82 world consumption, forecast at record 67.1 million bales, will be almost 1.5 million bales higher than 1980/81 indicating at least a partial return to the high growth pattern experienced during the previous ten years. The current forecast is of course predicated upon a general improvement in the world economy and consequent strengthening of textile demand.

Among major raw cotton importers, the People's Republic of China immediately stands out as the world's largest consumer of cotton. Textile demand grew steadily during the first part of the 70's and has risen by over a million bales every year since 1977/78. The increase in consumption from 1980/81 to 1981/82 is projected at 700,000 bales, somewhat slower than in the recent past. However, China's desire to provide more textile goods for domestic consumption and to expand textile exports indicates continued healthy growth in cotton consumption in the foreseeable future.

Cotton utilization in some other major Far Eastern consuming countries will also recover and show moderate growth during 1981/82. South Korea is forecast to recover from last year's relative decline and textile activity should equal the 1.6 million bales of 1979/80, the highest ever recorded. Taiwan will also recover from a lackluster year and is forecast in 1981/82 to equal or exceed the million bale consumption level of 1979/80. Both of these countries are adding textile production capacity in anticipation of improved export demand. Hong Kong, after a devastating year which saw raw cotton consumption drop from 1.1 million bales in 1979/80 to .6 million bales in 1980/81, can expect only a small increase in the coming year. However, Hong Kong spinners and weavers face steeply rising costs and consumption of raw cotton in the Colony may never again reach the 1.1 million bale level of 1979/80. Some textile operations have already moved to other areas of Asia where fixed and wage costs are lower. As in the case of China, much of the anticipated consumption gains in these countries depend on general economic recovery both at home and abroad. Japan, on the other hand, is projected to decrease consumption of cotton during 1981/82. Last year's textile performance was a disappointment, and the Japanese Spinners Association (JSA) implemented a "recession cartel plan" in May (with official sanction), in an attempt to keep prices from sliding more than they already had. JSA requested a three month extension but was turned down. It will now try to impose voluntary restraints on its members. In spite of these efforts the 1981/82 consumption outlook for Japan, one of the major U.S. export markets, is guarded.

The Indian consumption outlook is better in comparison with most of the rest of the world. 1980/81 was a good year for the Indian textile sector; raw cotton consumption reached 6.3 million bales, nearly 500,000 bales above the previous year. Forecast consumption for 1981/82 is 6.4 million bales, a smaller increase than the year before, but still reflective of a healthy domestic demand faced by Indian textile manufacturers. Pakistan, in contrast, will consume cotton in 1981/82 at about the same level as in 1980/81. Textile mills in Pakistan are having difficulty competing in export markets because of relatively high domestic lint prices.

Raw cotton consumption in Egypt will rise by almost 100,000 bales in 1981/82, after remaining steady at 1.3 million bales for the previous two years. Domestic textile demand in Egypt is relatively strong and manufacturing capacity is scheduled to be increased significantly in 1981/82. In Turkey, where cotton consumption has fluctuated during the past four years, 1981/82 should see a moderate 50,000 bale rise in use from the 1.3 million bale level of 1980/81. This reflects improved domestic demand and wider textile export opportunities, especially in the Middle East.

The outlook for cotton consumption in Western Europe is generally bleak, although there are a few countries where mill use will rise. Overall, Western European consumption in 1981/82 will be even with 1980/81. Weak demand and stiff competition from imports has especially hurt textile manufacturers in Belgium, France, Netherlands, Spain, Switzerland, and West Germany where cotton consumption is projected to decline in 1981/82. Some countries in Western Europe, including Italy and Denmark, will consume cotton at approximately the same level in 1981/82 as in the previous year. Small increases in consumption, reflecting steady demand, are expected in the UK, Portugal and Greece. The UK textile industry has had a particularly rough time in the last two years, but seems to have retrenched lately.

1981/82 Eastern European cotton consumption is expected to be maintained at last year's 3.4 million bale level, the same consumption level as three out of the last four years. Regional consumption gains this year were effectively curtailed by unrest in Poland, one of Eastern Europe's major textile producers. The Soviet Union on the other hand, will increase consumption in 1981/82 by 100,000 bales over 1980/81, and should consume a total of 9.4 million bales. This continues a trend established in the early 70's and carried over to the first year of the present decade.

Brazilian consumption, after declining over 150,000 bales in 1980/81 from the 2.6 million bale level in 1979/80, will make a slight recovery. Domestic demand is reportedly picking up and mill use should slightly exceed last year's level. Further increases in consumption depend on a strengthening of the Brazilian position in export markets, not currently anticipated. In Mexico, where consumption has fluctuated between 735,000 and 755,000 bales in the last four years, a slight decrease from last year's low level is projected. In spite of the increased textile production in that country, use of cotton is taking second seat to man-made fibers, with 1981/82 cotton consumption forecast at 730,000 bales.

In general, cotton use in the developing countries of Asia, Africa and Latin America will rebound from reduced 1980/81 levels. In fact, the consumption outlook for countries such as Thailand and Indonesia is quite bright, especially as they build textile capacity and move into a more competitive position for export markets. Lower wage and fixed costs will attract many textile manufacturers to the Third World and the world cotton consumption pattern will shift away from the developed nations.

Trade

World cotton trade is expected to improve during the 1981/82 marketing year with exports exceeding 20.5 million bales compared with 19.9 million in 1980/81. Major reasons for the improved trade outlook include: (1) The prospects for a large world cotton supply, with record or near record crops anticipated in many of the major exporting countries, as well as China; (2) attractive international prices with US varieties at their most competitive level in two years; and (3) historically low carryin stock levels being held, particularly by the major importing nations.

Major foreign textile producing countries are expected to increase cotton imports during the 1981/82 season. The Asian textile industry should expand slightly despite uncertainties in the Multi-Fiber Arrangement (MFA) negotiations and the world economy. China, even with its record crop will probably import 3 million bales of cotton in order to meet its rapidly expanding domestic demand. It is anticipated that favorable prices will encourage Japanese cotton imports to exceed the 3.2 million bale mark of 1980/81. Over the last 5 months Japan's cotton good stocks have been reduced and prices have strengthened.

In Korea, imports are expected to approach 1.6 million bales, 5 percent above the 1980/81 level. Although the export oriented textile industry in Korea has numerous concerns, the Government has placed increasing emphasis on its expansion and modernization plan, focusing efforts on expanding textile exports to non-quota countries and upgrading the quality and design of its products in other markets.

Cotton imports by Western Europe should increase slightly to 7.8 million bales from its depressed 7.6 million bale level in 1980/81. Structural adjustments are being made by some textile manufacturers with assistance from their respective governments. In turn, the EEC is taking a hard line in the MFA negotiations in an effort to restrain textile imports into the region.

At the present time, foreign exports are estimated at 13.5 million bales, 500,000 bales less than last year. Of the major exporters, only Argentina, Brazil, Australia, Israel, and Syria are expected to show increases. While Pakistan has a larger crop, and with its textile industry facing serious cost-price problems it hopes to expand exports of cotton. At this time, we believe its exports will be down from last year. Turkish exports are also expected to be down despite recent 25 to 50 percent reductions in the export deposit rate. At present Turkish cotton is still priced approximately 3 cents per kilogram above the international price level. Egypt's exports are expected to be lower because of its smaller crop and expected increase in consumption. Generally smaller crops in Central America and Mexico will hold down exports. No change expected in Soviet exports.

US exports are expected to reach 7 million bales during the season, nearly 20 percent above last year's 5.9 million bale level. A large portion of the increase can be attributed to the fact that US cotton is competitively priced in the world market. It is anticipated that the US share of world cotton trade will increase to 34 percent during the 1981/82 season, approximately 4 percent above last year's level.

Sales during the week ending October 15 were 198,000 running bales (R.B.) up 88 percent from the previous week and 23 percent over average weekly sales level since September 1.

The accumulated commitment for upland cotton during the 1981/82 marketing year is 3,815,400 R.B. - 57 percent of expected exports for the entire marketing year - only eleven weeks into the year.

Larger sales commitments are: South Korea - 861,000 R.B., 61 percent of estimated imports from the US this year, China - 827,000 R.B., 54 percent, Japan - 595,000 R.B., 50 percent, and Taiwan - 475,000 R.B., 95 percent.

Stocks

World cotton stocks at the end of this season are now expected to increase around 3.4 million bales to 25.6 million, the highest level since the 1975/76 season. U.S. stocks are estimated at 5.0 million bales, the highest level since 1978/79 and account for 70 percent of the world stock increase, reflecting an anticipated record crop and limited increases in demand.

Foreign stock levels are expected to increase about 1 million bales to 20.5 million and the highest level since 1975/76. During 1981/82, the Soviet Union and Pakistan should also increase stock levels in the face of favorable crop conditions and limited demand.

During the early 1970's the level of stocks held by consuming-importing countries held fairly constant at about 4-5 months supply. However, since 1977/78 despite increase use, mills have not increased their stocks and now hold enough cotton for only about 3 months needs, due mainly to the high cost of money.

Prices

In reaction to anticipated large world cotton supplies and increased stock levels, coupled with continued sluggish demand, the European "A" Index of cotton prices continues to decline and for September averaged 76.96 cents per pound compared with an average of 100.62 cents per pound a year ago. (The Index was changed in August and now reflects M 1-3/32 inch). Prices for U.S. Memphis Territory cotton have followed the same trend, declining from 106.88 cents last September to 78.81 cents this year. Of significance is the difference in price between the "A" Index and Memphis Territory cotton. Between September 1980 and June 1981 the premium for Memphis Territory cotton ranged between 6.11 cents and 10.45 cents and resulted in many buyers turning to other countries for cotton. Since then, however, the premium has declined sharply, averaging 1.85 cents in September and obviously makes U.S. cotton competitive with foreign growths and should stimulate U.S. exports. Given the current level of U.S. prices and the US support price level, further price declines may be minimal.

Table 1

Cotton (all kinds) area, yield, and production: World and selected countries and regions 1/

Region/country:	Area		Yield				Production			
	: 1979/80	: 1980/81	: 1981/82	: 1979/80	: 1980/81	: 1981/82	: 1979/80	: 1980/81	: 1981/82	: 1981/82
	---Million hectares---		Kilograms per hectare				-----Million 480-pound bales-----			
United States	5.2	5.3	5.6	613.	453.	605.	14.6	11.1	15.5	15.5
USSR	3.1	3.1	3.2	925.	988.	930.	13.1	14.3	13.5	13.7
Cen. Planned Asia:										
PRC	4.5	4.9	5.1	491.	552.	568.	10.1	12.4	13.3	13.3
South Asia										
India	8.1	8.1	8.2	162.	164.	167.	6.0	6.1	6.3	6.4
Pakistan	2.0	2.1	2.1	366.	340.	353.	3.4	3.3	3.4	3.6
M East and Africa:										
Egypt	0.5	0.5	0.5	963.	1011.	958.	2.2	2.4	2.2	2.3
Sudan	0.4	0.4	0.4	290.	253.	255.	0.5	0.4	0.4	0.4
Turkey	0.6	0.7	0.7	778.	715.	735.	2.2	2.2	2.3	2.3
L America & Carib:										
Argentina	0.6	0.3	0.4	283.	270.	300.	0.7	0.4	0.6	0.6
Brazil	2.0	2.0	2.0	293.	305.	297.	2.7	2.8	2.8	2.7
Cent America 3/:	0.3	0.3	0.2	923.	937.	952.	1.1	1.2	1.2	1.0
Mexico	0.4	0.4	0.4	859.	965.	954.	1.5	1.6	1.6	1.5
Total above	27.6	28.1	28.7	460.	451.	477.	58.3	58.2	63.2	63.3
Other countries	4.4	4.5	4.7	361.	349.	344.	7.3	7.2	7.5	7.5
World	32.0	32.6	33.4	446.	437.	458.	65.6	65.4	70.6	70.9
World less U. S.	26.8	27.3	27.8	414.	434.	429.	51.0	54.3	55.1	55.4
Major foreign ex- porters 4/	7.3	7.4	7.4	721.	745.	720.	24.1	25.4	24.7	24.9

1/ Totals and averages based on unrounded data. 1980/81 estimates are preliminary. 1981/82 is projected based on surveys, trends, and analysts' judgement. See footnote on page 8 for source.

2/ Production is subject to considerable year-to-year variation. A measure of the reliability of the estimates by country is presented on page 18.

3/ Includes Nicaragua, Guatemala, El Salvador, Honduras, and Costa Rica.

4/ Includes USSR, Pakistan, Egypt, Sudan, Turkey, Central America, and Mexico.

B-2-COTTON AND SEED STOCKS, AND
EXPORTS & CONSUMPTION BY AREA 1/
1974/75-81/82 (1000 450 LB BALES)

BEGINNING STOCK:											PRELIMINARY		
	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	FORECAST			
EXPORT NATIONS													
US	14053	10861	12244	10338	14272	11977	11350	12524	15524				
USSR	3803	5708	3731	2028	5247	3958	3000	2632	3445				
	3000	3390	2780	2040	1945	1856	2402	3327	3577				
IMPORT NATIONS													
PRC	11575	13375	11916	9522	10471	5994	10547	9673	10052				
	3500	4100	4750	3500	2800	2300	2500	2020	3420				
FOREIGN TOTAL													
	21620	25149	20179	17432	19333	18013	15407	15539	20541				
WORLD TOTAL 2/													
	25028	30336	23460	20330	24863	21971	22107	22197	25586				
PRODUCTION:													
EXPORT NATIONS													
US	44820	36051	40241	46915	41862	47349	44559	45825	45825				
	11560	8302	10581	14389	10956	14629	11122	15476	15476				
USSR	12220	11610	12013	12710	12237	13125	14275	13700	13700				
IMPORT NATIONS													
PRC	19653	17927	16594	17166	18230	18250	20791	22054	22054				
	11500	10700	9400	9400	9530	10140	12430	12300	12300				
FOREIGN TOTAL													
	52933	45590	46154	49692	49236	50370	54326	55404	55404				
WORLD TOTAL 2/													
	64473	53968	56735	64061	60092	65599	65450	70830	70830				
CONSUMPTION: 3/													
EXPORT NATIONS													
US	24003	25665	25623	25475	25793	25044	25412	25555	25555				
	5000	7250	6674	6509	6352	6506	5831	6165	6165				
USSR	8500	8500	8500	8950	9000	9100	9300	9400	9400				
IMPORT NATIONS													
PRC	34610	35162	35135	34837	35910	39231	40209	41130	41130				
	11800	10700	11100	11600	12600	13750	15200	15900	15900				
FOREIGN TOTAL													
	52348	53697	53645	53803	56286	56819	59735	60324	60324				
WORLD TOTAL 2/													
	58708	61147	60619	60312	62733	65325	65027	67039	67039				
EXPORTS:													
EXPORT NATIONS													
US	16575	17724	16750	18433	19009	21476	19073	19905	19905				
	3926	3371	4734	5484	6180	9229	5326	7025	7025				
USSR	3560	3590	4300	4160	3753	3770	4300	4300	4300				
IMPORT NATIONS													
PRC	923	1281	826	705	863	633	825	603	603				
	200	250	200	100	50	0	0	0	0				
FOREIGN TOTAL 4/													
	13572	15756	12732	13654	13697	13370	13972	13483	13483				

1/ SEASON BEGINNING AUGUST 1.

2/ EXCLUDES COTTON AFLLOAT, IN TRANSIT, AND IN FREE PORTS.

3/ DOES NOT INCLUDE DESTROYED OR UNACCOUNTED.

4/ INCLUDES SMALL QUANTITIES REEXPORTED. FOREIGN TOTAL IS ACTUAL WORLD TOTAL MINUS UNITED STATES COMPONENTS MAY NOT ADD DUE TO ROUNDING.

OCTOBER 16, 1981

Table 3
CONSUMPTION 1970-71 AND 1977-78 TO 1981-82 1/ 2/
(1,000 BALES OF 480-POUNDS NET)

Countries	1970-71	1977-78	1978-79	1979-80	Estimated 1980-1981	Forecast 1981-82
United States...	8,204	6,509	6,352	6,506	5,891	6,165
USSR.....	8,170	8,950	9,000	9,100	9,300	9,400
PRC.....	9,300	11,600	12,600	13,750	15,200	15,900
Japan.....	3,508	3,063	3,288	3,355	3,311	3,170
Korea, South	550	1,156	1,270	1,550	1,502	1,550
Taiwan.....	705	1,010	1,010	1,000	920	1,010
Hong Kong.....	775	896	900	1,100	600	650
India.....	5,250	5,182	5,526	5,817	6,300	6,400
Pakistan.....	2,030	1,937	1,890	2,000	1,885	1,859
Turkey.....	805	1,240	1,403	1,185	1,332	1,380
Egypt.....	931	1,295	1,310	1,330	1,332	1,425
West Europe.....	6,040	5,089	5,356	5,618	5,209	5,213
East Europe.....	3,103	3,386	3,343	3,386	3,386	3,390
Brazil.....	1,391	2,251	2,457	2,573	2,411	2,434
Mexico.....	670	735	750	755	735	730
Other Countries..	4,351	5,421	5,631	5,610	5,603	5,688
World.....	56,123	60,312	62,738	65,325	65,627	67,089
World less U.S..	47,919	53,803	56,386	58,819	59,736	60,924

1/ Season beginning August 1. 2/ Does not include destroyed or unaccounted.

Source: Attache reports and FAS Tobacco, Cotton and Seeds Division, CP.

Keith Collins, ERS, USDA

1982 Agricultural Outlook Conference, Session #21
Washington, D.C.

OUTLOOK '82



For Release: Wednesday, November 4

This season's U.S. cotton market is following the pattern established over the last five years--a good weather, low price year subsequent to a poor weather, high price year. A speaker at this Outlook Conference could almost subsist on two prototype speeches, one for each of these market situations, by dusting off each speech biennially and filling in the appropriate blanks.

An extra-large blank must be reserved for this year's production total. It now appears that the story for the remainder of the current season is how the market will respond to what may well be the largest cotton crop in almost three decades. Such a crop has very different effects on the various cotton industry segments. While ginner and warehousemen can look forward to improved revenues, farmers, merchants, mills, and retailers must pray at the altar of demand. Meanwhile, budget-conscious government policymakers sweat over loans, deficiency payments, and supply control.

The behavior and interaction of these groups, when combined with foreign buying, comprise the U.S. cotton market. This morning, I am going to examine the current season's outlook for these market participants focusing on disappearance, supply, and price. Then, I am going to discuss the 1982/83 outlook.

1981/82 OUTLOOK

Total Use

Let's begin the analysis on the demand side of the market. Total use of U.S. cotton depends on the volume of exports and domestic textile mill use and, for the third year in a row, it is likely exports will exceed mill use this season. A huge number of interesting developments in foreign countries go into determining U.S. exports. However, from the viewpoint of domestic market analysis, we are really interested in determining one number--the quantity of cotton to be exported. To provide an overview of export demand, the myriad factors considered and numbers generated by foreign market analysts can be collapsed into a couple of general indicators--foreign supplies and foreign mill use.

As the difference between foreign supplies, defined as stocks plus production, and foreign mill use narrows, U.S. exports are likely to rise. To keep mills in operation when the gap is small, foreign countries, as a group, must draw down stocks or increase their imports of U.S. cotton. Figure 1 indicates the gap gradually lessened during the seventies reaching its minimum in 1979/80, while U.S. exports trended up, hitting a record 9.2 million bales in 1979/80 (table 1). The gap widened in 1980/81, and exports fell to 5.9 million bales.

Table 1--Cotton supply and use: 1979/80, 1980/81, and projected 1981/82

Market	:	:	:	1981 <u>2/</u>
Variable	:	:	:	Prob.
	:	1979	1980 <u>1/</u>	jected variab.
	:	:	:	:
	:	Million 480-lb. bales		
	:			
Beginning stocks	:	4.0	3.0	2.7
Production	:	14.6	11.1	15.5
Total supply <u>3/</u>	:	18.6	14.2	18.2
Mill use	:	6.5	5.9	6.2
Exports	:	9.2	5.9	7.0
Total use	:	15.7	11.8	13.2
Ending stocks <u>4/</u>	:	3.0	2.7	5.0
	:	Cents per pound		
	:			
Farm price	:	63.4	76.4 <u>5/</u>	(6/)
Target price <u>7/</u>	:	57.70	58.40	70.87
Loan rate <u>7/</u>	:	50.23	48.00	52.46

1/ Preliminary.

2/ As of October 13, 1981. Chances are two out of three that the outcome will fall within the implied ranges.

3/ Includes imports.

4/ May not add because of rounding.

5/ Average to April 1, 1981.

6/ USDA is prohibited from publishing cotton price projections.

7/ For grade 41 staple 34 cotton.

This season, foreign production and use are both expected to rise by over one million bales, so the gap is expected to be about the same as a year ago. However, exports are placed at 7 million bales, up because foreign stocks are expected to rise by about one million bales. Heavy export sales since August provide early season support for this export estimate.

The other half of the total use equation is domestic mill use. Last season, mill use fell to 5.9 million bales, a level forecast at this conference a year ago. This season, mill use is expected to rebound slightly to 6.2 million bales. However, mill use this summer has showed little strength. Seasonally adjusted mill use, at an annual rate, for June, July, and August was 5.7, 6.3, and 5.8 million bales, respectively.

The state of the U.S. economy will be an important determinant of total fiber and cotton mill use this season. The economy's performance has generally been weak since the beginning of 1980. Real GNP growth in the third quarter of 1981 was negative, for the second quarter in a row, thus qualifying the current situation as a recession. With conflicting expansionary fiscal policy and contractionary monetary policy, it is unlikely that sustained GNP growth and interest rate reductions are possible this marketing year. In fact, many economists are now suggesting sluggish GNP growth and only small declines in interest and inflation rates can be expected through the first half of 1982.

High interest rates have been trumpeted as the primary factor in lower cotton use last season. High rates have a two-pronged effect: (1) they increase the cost of holding inventories of both raw and processed cotton, thus causing mill use slowdowns as inventories are reduced. This is a one-shot event; once inventories are optimal in relation to carrying costs, other things equal, production should pick up despite high interest rates. (2) High rates depress business investment leading to slower economic growth, reduced employment and income, and thus spending on textiles. This latter factor will be the more important interest rate effect this crop year, but it is only one of several important factors.

Let's now look at the relationship between general economic activity and mill use. The index of leading indicators, a composite of 10 measures of economic activity, is often used to assess the state of the economy. Figure 2 relates mill use to the index and highlights mill use changes during the course of the 1974 and 1980 recessions. There are some similarities during these recessions. First, mill use acts as a lagging indicator, falling substantially only after each recession was underway. Second, the recessionary decline was greater for manmade fiber use than for cotton use. This results from slowdowns in housing construction, auto production, and general industrial production, where textiles made from manmade fibers have particular importance. (Almost no cotton goes into new houses, cars, and tires, and cotton's share of industrial textile products was only 20 percent in 1980.)

For cotton mill use, there is an important difference between the 1970 and 1974 recessions and the 1980 recession. As the former recessions ended, mill use rebounded sharply, after the latter recession it did not, so we have entered the 1981 recession without the benefit of a high beginning mill use rate. However, demand strength should come from personal consumption expenditures on nondurables--after dropping during the first half of 1980, they have gone up every quarter (despite GNP drops) and are expected to rise throughout 1981/82.

Another important factor affecting mill use last season and a factor now is mill inventories of textiles. The inventory position of total textile mill products did not deteriorate much as a result of the 1980 recession, table 2.

Table 2--Textile inventory positions at mills

Item	:	Average during first half of	
		1980	1981
	:		
Textile mill products <u>1/</u>	:	1.60	1.54
Cotton print cloth <u>2/</u>	:	.15	.11
Denim <u>2/</u>	:	.16	.34
Corduroy <u>2/</u>	:	.24	.68
	:		
<u>1/</u> Ratio of inventories to shipments.			
<u>2/</u> Ratio of inventories to unfilled orders.			

This indicates mills should generally increase use with growth in final product sales. This is also true for lightweight cotton fabrics, as indicated by the inventory data. The major problem is in denim and corduroy. Together they account for 25 to 30 percent of cotton mill use. Stocks are up and unfilled orders are way down. For denim, the primary user, there are suggestions that

consumers now hold their optimal inventories of jeans and buy only for replacement. It is possible that by early next year orders will have improved and denim and corduroy stocks worked down. However, substitute constructions such as stretch denim made from spandex and polyester filament and the rising popularity of lightweight casual slacks such as poplins, drills, etc., will likely act as a drag on any major mill turnaround for denim and corduroy this season.

Cotton textile trade also helps explain low recent mill use levels. The effect of the appreciation of the dollar on exchange markets and a dampened world textile market are apparent in figure 3. Based on data through August, cotton textile imports this season could rise 300,000 equivalent bales above 1980. Exports could drop 200,000 bales, implying a one-year increase in the textile trade deficit of 500,000 bales--a negative impact on mill use last season and thus far this crop year.

Cotton prices could spur mill use this season, figure 4. The monthly average mill price, as high as 95 cents a pound during January, dropped to 76 cents by September. Polyester reportedly held firm over this period at 85 cents. Cotton prices fell below polyester in August for the first time since March 1975. Although mills appear to be less sensitive to relative fiber price changes in recent years, and reactions occur with a 3 to 9 month lag, lower cotton prices should help mill use during the second half of this season.

Supply

The USDA's October crop survey indicated cotton production is likely to total 15.5 million bales this season, a 28-year high and 4.4 million above a year ago. Based on historical differences between the October estimate and actual production, chances are 2 out of 3 production will fall between 14.7 and 16.3 million bales. Figure 5 indicates the variability of production which ranged, as a percent of 1974, from 72 to 128. The shark's tooth pattern since 1977 is almost completely due to yield changes. Although export changes have become larger in recent years, weather is clearly the ultimate destabilizing market force.

Yields are expected to average 540 pounds, only 7 less than the record established in 1979/80. Abandonment is forecast at 3.8 percent, an unusually low level attributable to ideal weather this summer. Because abandonment was 8.2 percent in 1979, the year of record yield, this season's abandonment forecast contributes another surprise to this unusual season. A single percentage point change in abandonment alters production by an average 160,000 bales.

The preliminary cost estimate for the 1981/82 crop is \$406 per acre (excluding land), 16 percent above 1980/81, figure 6. Total revenues (including cottonseed) stayed slightly above costs until last season when net returns turned negative. However, disaster payments of \$302 million cushioned 1980 losses. Using current lint and seed prices, this season's gap between costs and returns appears to be about the same as a year ago. The expected large yield increase will likely offset lower cotton prices, but some areas such as the Southwest, with a likely 70 percent yield gain, will benefit more than others such as the West, where only an 8 percent gain is expected. Per pound costs (excluding land) also show the effect of higher yield; 84 cents last season, they are expected to fall to 68 cents this season--a 19 percent drop.

Stocks and Prices

With production likely to rise by 4.4 million bales but total use up by only 1.4 million, stocks on August 1, 1982 are expected to increase sharply to 5 million bales, compared with 2.7 million this August. This summer's unfolding realization of a large increase in available supplies caused significant drops in spot, futures, and farm prices.

USDA production and use forecasts published monthly since May are shown in figure 7. At planting time, a crop of 13.8 million bales and disappearance of 13.1 million were forecast. Farm prices stood at 73 cents a pound, down from 80 cents during the winter. As a large crop became more probable, prices fell with declines especially sharp in August. The production forecast for August was raised 1 million bales to 14.8 million. The current USDA forecasts were first established in September.

The ratio of stocks to use has been well correlated with cotton prices during the seventies, figure 8. For 1981/82, the ratio is forecast at 38 percent (5 million in stocks divided by 13.2 million total use), compared with 24 percent in 1980/81. Starting from the coordinate for 1980/81 and moving down a path parallel to the sketched in price/stocks-to-use ratio line, a price in the low sixties is indicated for a 38 percent ratio. Prices remaining at current levels would guarantee a deficiency payment.

Government Cotton Program

A deficiency payment would be made on this season's crop and announced in February, if the 1981 calendar year average farm price is less than the upland target price of 70.87 cents a pound. A producer receives a payment rate equal to the difference between the market and target prices regardless of what price he receives for his cotton.

The two factors that will determine the calendar year price, this fall's marketings and prices, are related. Higher marketings could lower farm prices and vice versa. Analysts have been trying to guess recent movements in spot and futures prices by looking at incentives to store cotton. Considering opportunity costs, CCC interest charges, and monthly storage costs, total carrying costs appear to exceed 1 cent per pound per month. Thus, over the 10-month life of a nonrecourse loan, market prices would have to rise a dime to make storage pay.

It is difficult to guess how extensive loan placements will be. Consider the recent record of the percent of the crop sold by January 1:

	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>
Percent:	45	55	60	57

Very large crops were harvested in 1977 and 1979, yet the marketing patterns were very different. If 55 percent of this year's crop is marketed by January 1 at a price of 62.8 cents a pound (preliminary upland price for September), deficiency payments would be in the range of \$400 million and help reduce the per acre losses indicated in figure 6.

1982/83 OUTLOOK

Attention is now turning to planted acreage. Last spring farmers planted 14.3 million acres, down slightly from 14.5 million in 1979/80, figure 9. The

small change reflected mixed price signals: cotton rose relative to soybeans, but fell relative to sorghum. Cotton was up relative to wheat, but because of high 1980 abandonment, some wheat was planted in the fall of 1980 at the expense of spring 1981 cotton.

Spring 1982 cotton acreage will depend on what farmers expect crop prices, yields, and costs to be during 1982/83. As a naive guide to producer expectations for next season's prices and yields, we can look at relative gross crop returns for this season using yield forecasts, current cotton prices, and forecasts of other crop prices. In the Southwest, returns are up relative to sorghum, but this is primarily due to yields, also wheat prices look bullish, so small declines in acreage in the Southwest and West are likely. In the Delta, returns are down slightly relative to beans, but rice prices are weak, so only a small decline is likely in Delta and Southeast acreage. Thus, farmers could plant in a range of 13.2 to 14.2 million acres this spring and based on current prices, plantings in the upper half are more likely.

Disappearance next season could total about 13-1/2 million bales. Domestic mill use could rise slightly, stimulated by a stronger economy and this year's low cotton prices. Exports could also rise modestly with expected growth in foreign mill use and perhaps some acreage adjustment caused by this season's low prices.

With only a small increase foreseen in 1982/83 disappearance, an adjustment to this year's large supplies needs to come from acreage reduction. However, the acreage forecast and normal yields suggest stocks on August 1, 1983, could be around 4 million bales, or larger. Of course, much can change between now and spring, but the primary determinant of next season's supply/demand conditions will undoubtedly be rainfall and heat.

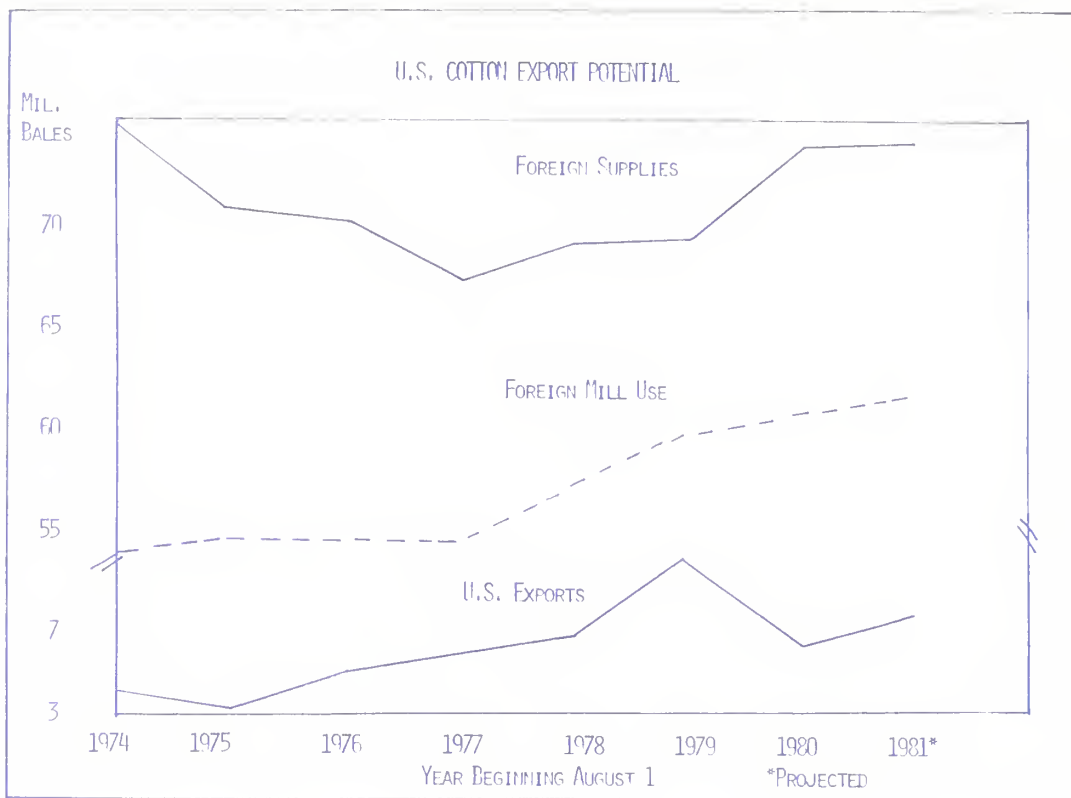


FIGURE 1

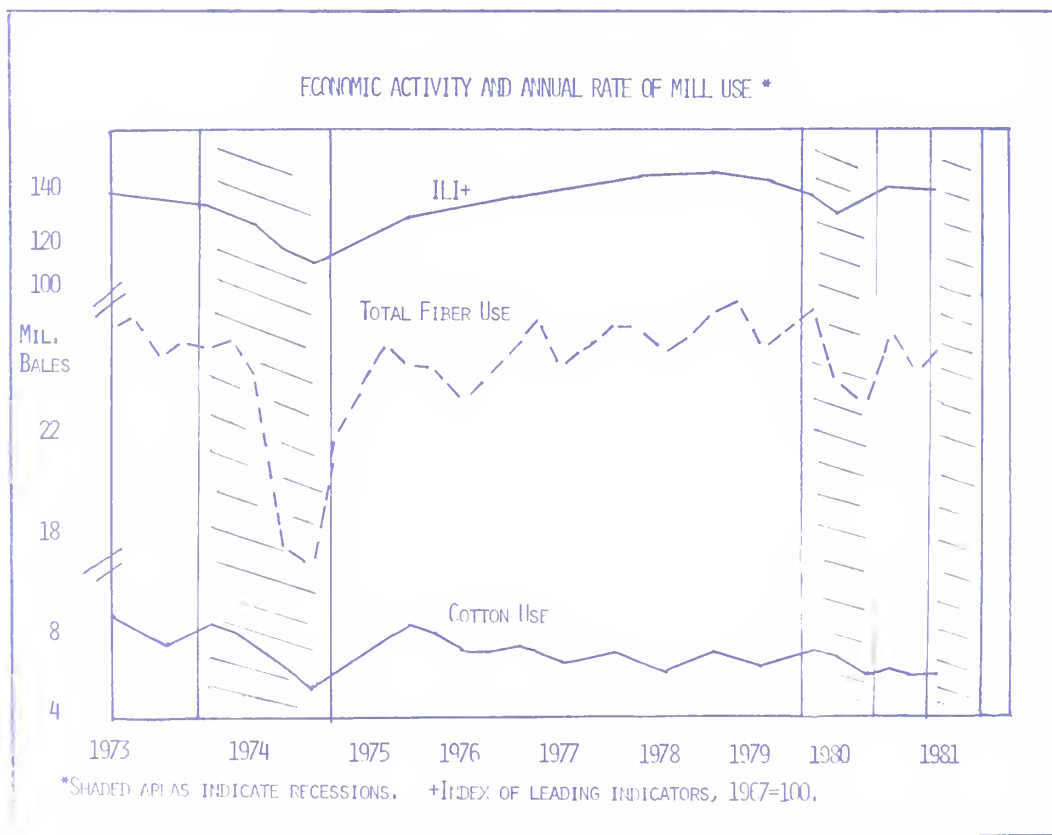


FIGURE 2

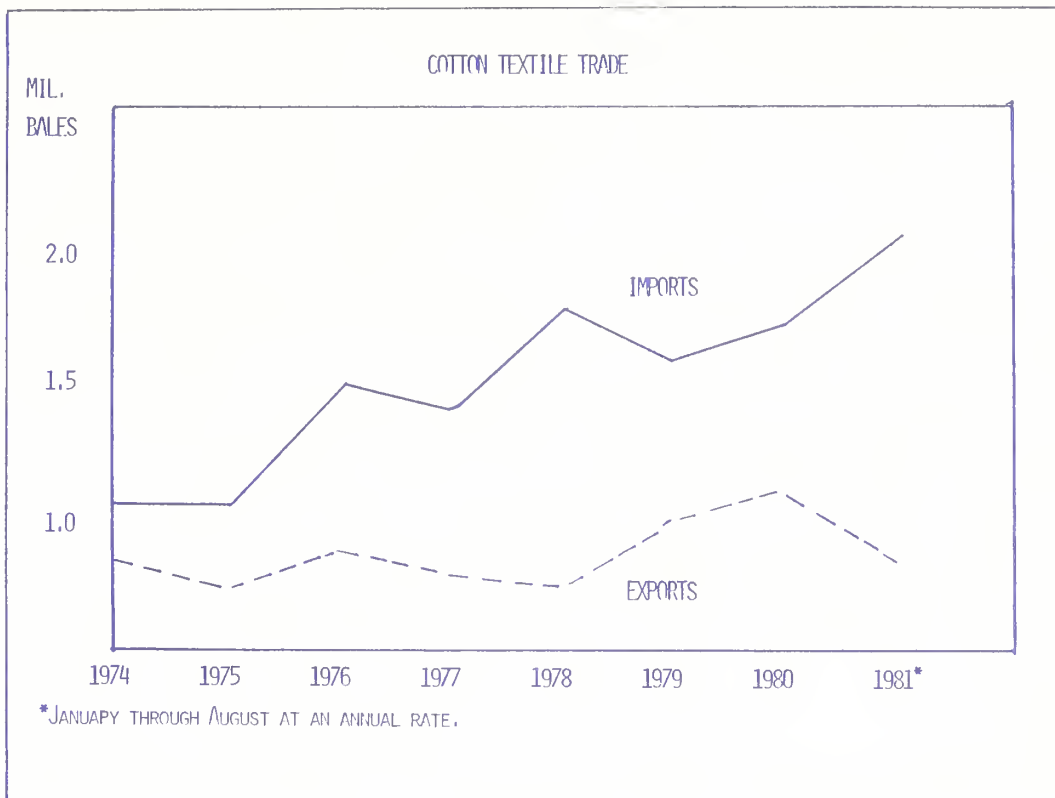


FIGURE 3

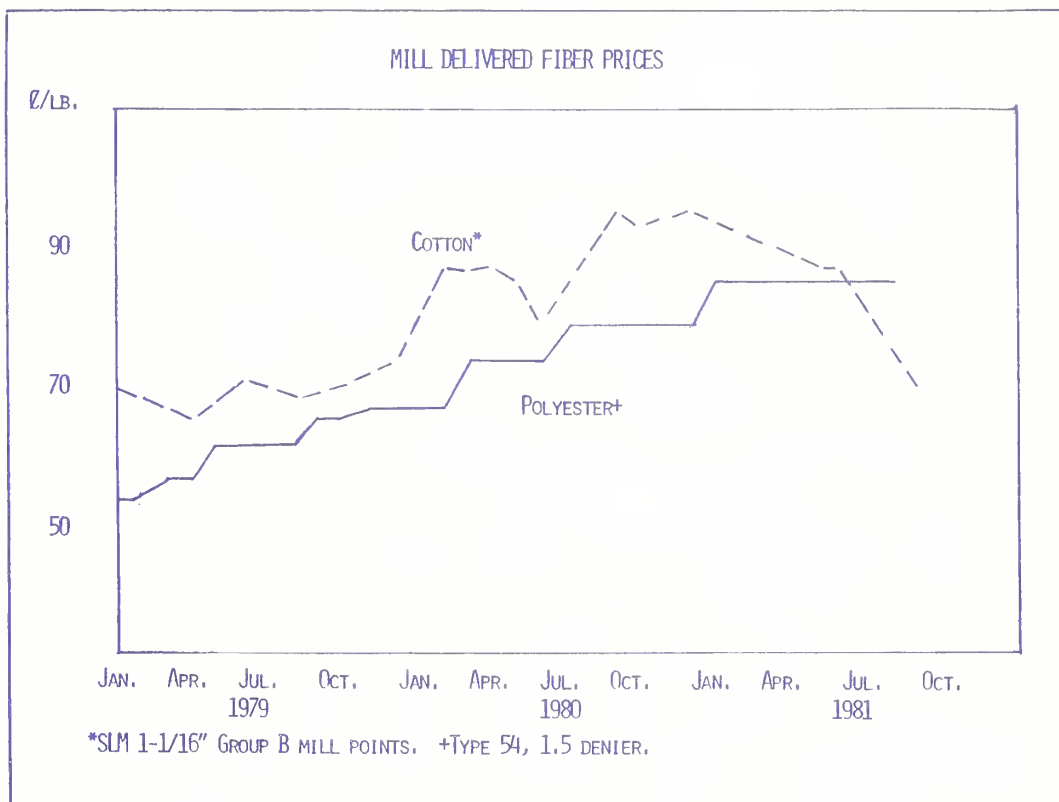


FIGURE 4

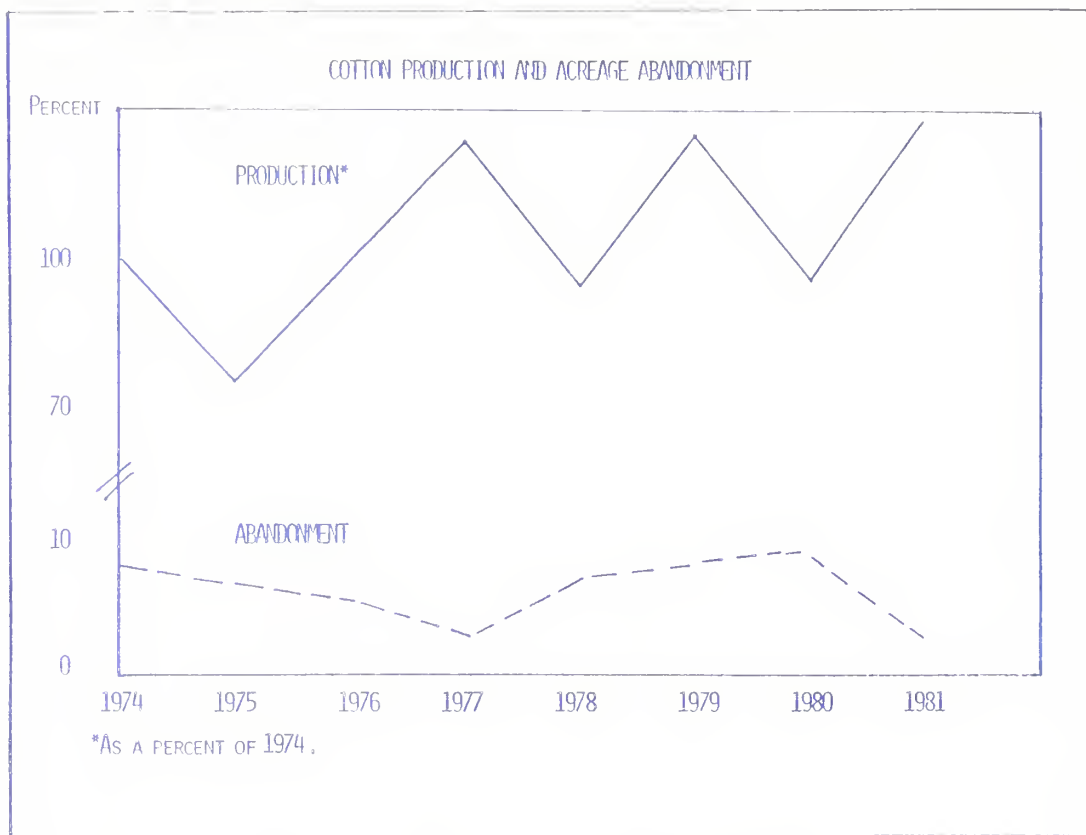


FIGURE 5

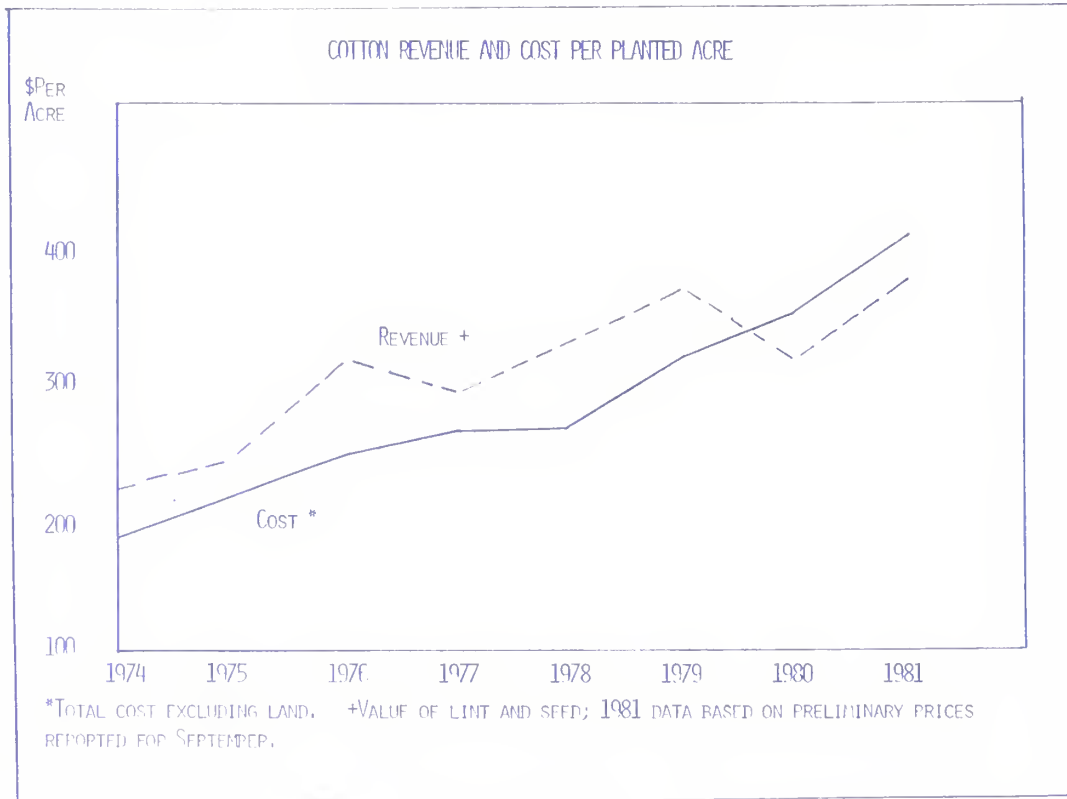


FIGURE 6

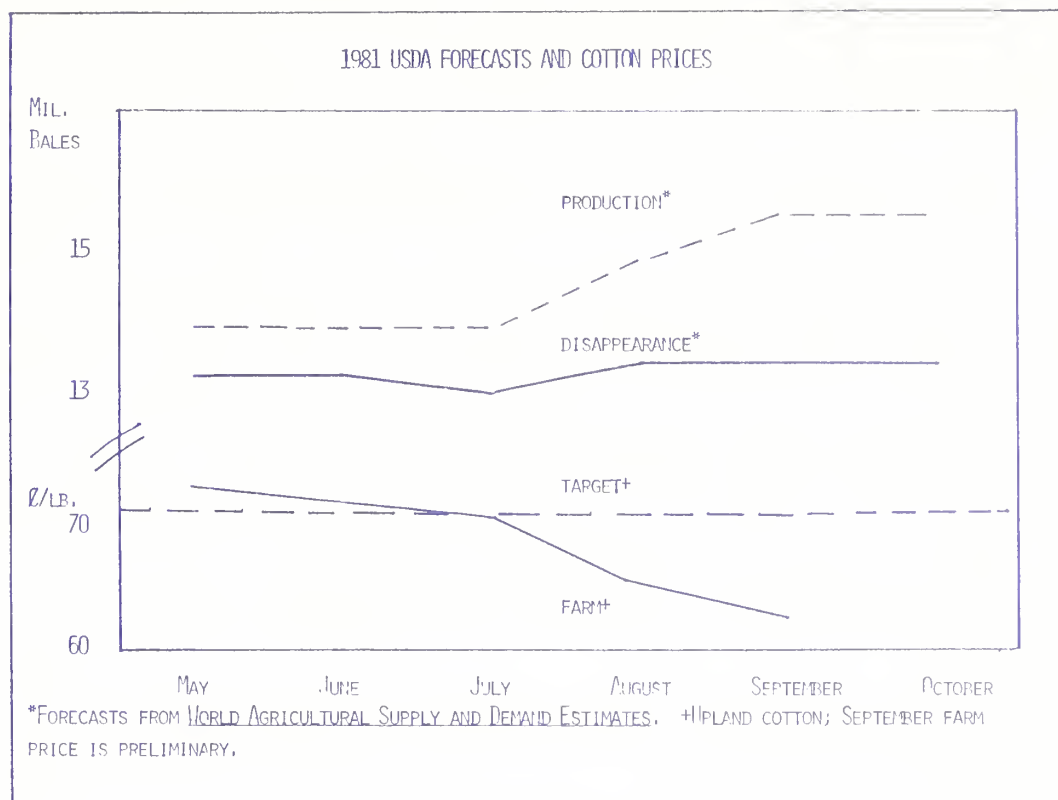


FIGURE 7

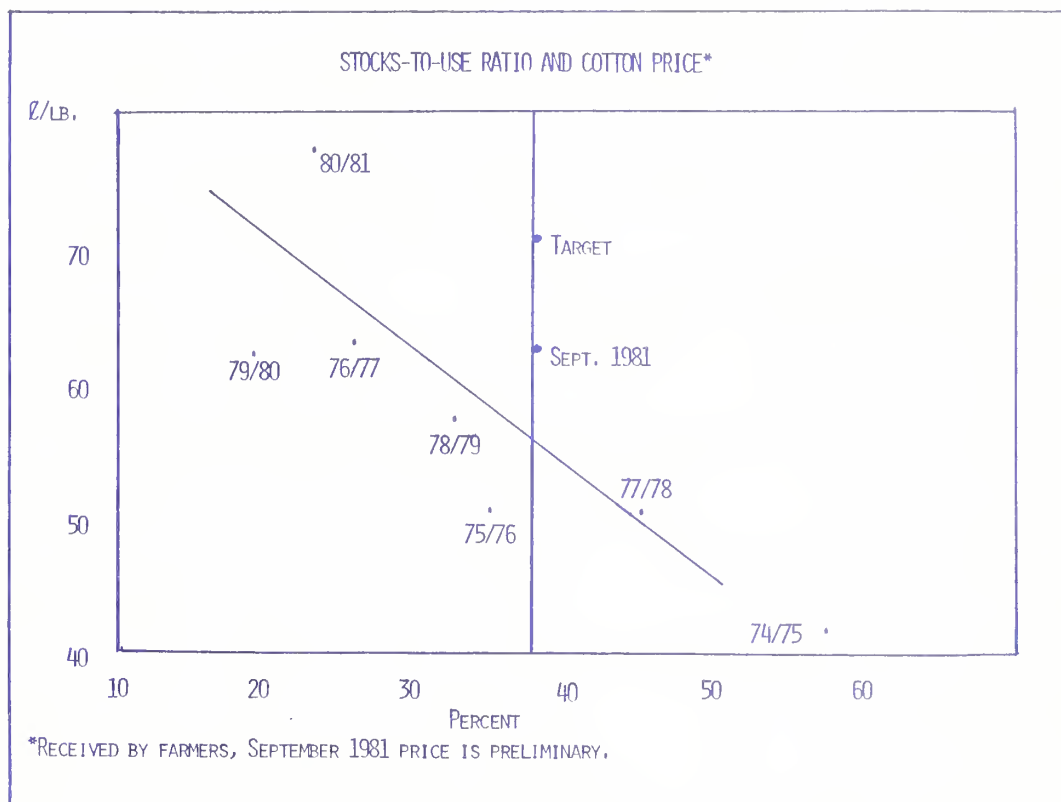
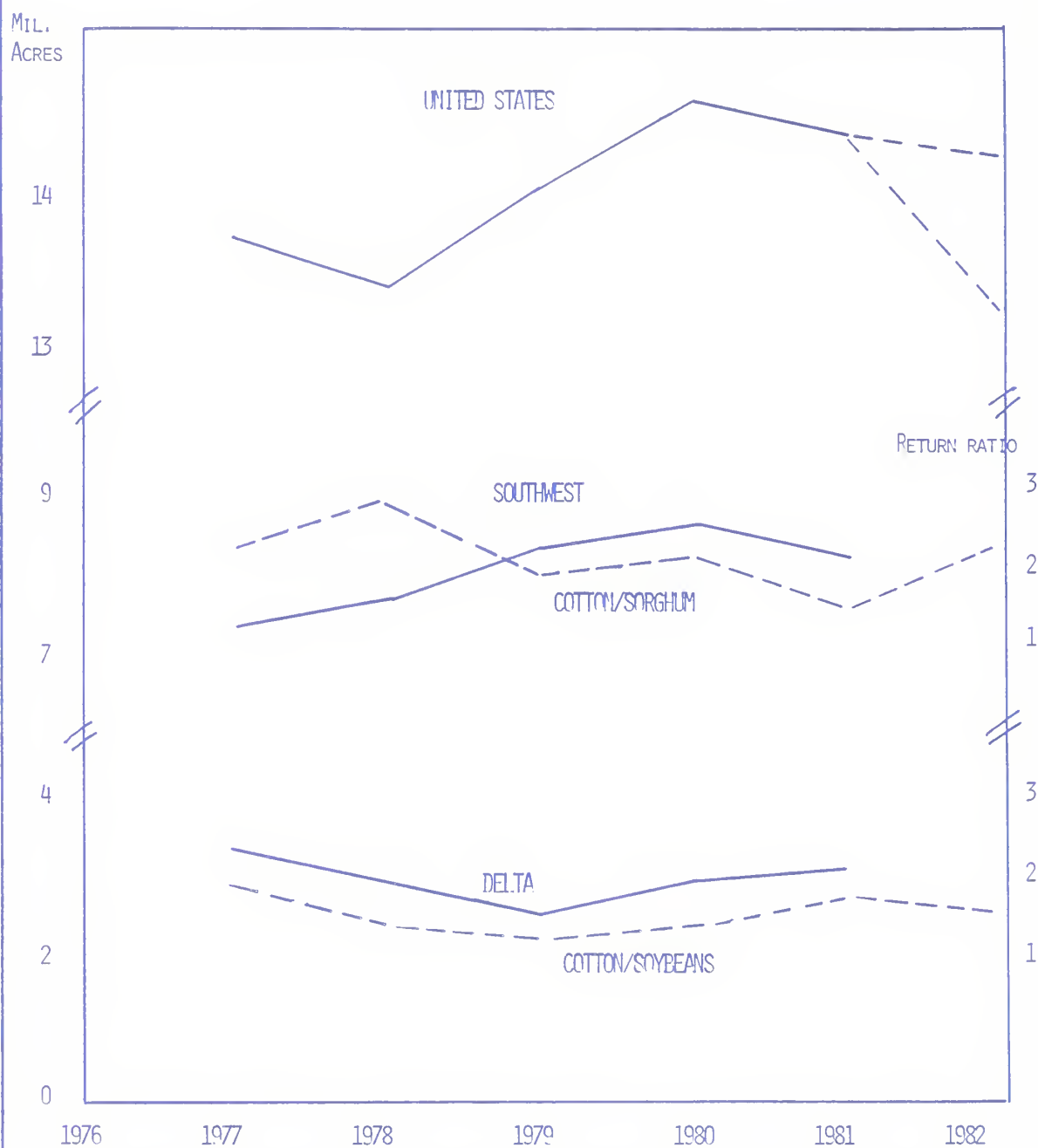


FIGURE 8

COTTON PLANTED ACREAGE AND RELATIVE CROP RETURNS *



*RETURN IS REGIONAL YIELD TIMES NATIONAL AVERAGE FARM PRICE. RETURN RATIOS ARE FOR PREVIOUS YEAR. For 1982, COTTON PRICE IS PRELIMINARY SEPTEMBER 1981, OTHER PRICES ARE FORECASTS.

FIGURE 9

Phil Burnett/Cotton Board

1982 Agricultural Outlook Conference, Session #21
Washington, D.C.

For Release: Wednesday, November 4, 1981



It is a pleasure to participate in this agricultural outlook conference.

It is certainly a privilege to have this opportunity to visit with you distinguished leaders from the public and private sectors of agriculture.

Moreover, it is especially gratifying to be on the same program with Russ Barlowe, Glenn Samson and Keith Collins, all of whom I have had the pleasure of working with at the National Cotton Council and more recently, at the Cotton Board.

Having just listened to their comments, I can tell you that they have made the best possible case for a strong research and promotion program.

In these times, we need to do everything we can to improve the demand side for cotton.

If we improve the demand side, then we can create new markets. But as much as we need to improve demand, we must also produce and process cotton more efficiently to be more competitive in the marketplace.

As you may guess, there is a lot going on in cotton research and promotion to do just this.

I, for one, am excited about the future of cotton because of this strong commitment, particularly by the progressive cotton producers of America who support agriculture's largest self-help program.

In the next few minutes, I want to talk about these activities that are designed to address the challenges facing our industry.

But first, a few general observations . . .

Keep in mind that this program that I am discussing today is one segment of the total research and promotion effort on behalf of cotton. Producer funds now collected by the Cotton Board and expended through Cotton Incorporated form the essential core of this total effort, but they are only part of that total program. Our budget represents about \$22 million, roughly one third of the total investment which exceeds \$60 million. The balance comes

from the U. S. Department of Agriculture, with the rest from states also involved in cotton and cottonseed research. This is exclusive, however, of the agricultural extension program, plus the very sizeable investment by the private sector.

Additionally, you will hear me talk alot about Cotton Incorporated. Please keep in mind that much of its work has been carried out in cooperation with these Federal and State agencies. You might also remember that the cotton industry research and promotion program spans over 40 years, long before Cotton Incorporated came into existence in 1971. Its roots are in the formation of the National Cotton Council. Today, of course, the Council is primarily involved in legislative and regulatory areas. On the other hand, the work of cotton research and promotion is administered by the Cotton Board, working in cooperation with Cotton Incorporated. Specifically, the Cotton Board provides overall direction for the program, contracts with Cotton Incorporated to carry out actual projects, and collects the per bale assessments from growers.

Let me add too that our collection rate over the years is one of the best, over 99 per cent. As these funds are collected, they are then invested until needed. In the past, the return on these investments has paid the administrative costs of the Cotton Board. While this is increasingly difficult to continue in the face of inflation, we're very proud of this record and remain as committed as always, to assuring that the U. S. producer gets the maximum return for his dollars.

Moreover, even as we look to the difficult challenges ahead, those of us involved in research and promotion believe that we do have a successful producer funded and directed program.

Think of the new products that have helped turn the tide back to cotton in the marketplace: a new generation of knits and wovens featuring at least 60 per cent cotton, versus the 35 to 50 per cent blends; the 100 per cent easy care cotton sheet joining the 100 per cent cotton shirt, towel and all cotton denim; and safety apparel used by astronauts and other industrial applications.

Think of the new systems that have generated millions of dollars in additional savings from the farm to the mill: the module builder, which is used in about 25 per cent of the nation's crop; the module feeder; and a revolutionary cleaning and combing process called the CottonmasterTM, which is reopening the growing non-woven market of diapers, wiping cloths and other uses to cotton.

Finally, think of the increasing awareness of cotton, thanks to the promotion of the Cotton Seal through national advertising. Since this was first introduced in 1973, 57 per cent of all U. S. consumers have come to associate this Seal with cotton's natural qualities.

Reflecting on these and other examples, it's no wonder that cotton has been bouncing back from the field to the retail counter.

The bottom line is that a 15 year decline of cotton's overall market share has been arrested and \$250 million of additional savings have been generated through new production equipment and systems.

Speaking of accomplishments, one of the most important and I believe far reaching, is the new era of harmony and cooperation between the Boards of Directors of the Cotton Board and Cotton Incorporated. Truly, they are putting the interests of the producer first.

Please remember that these Board Members serve unselfishly without compensation, while providing outstanding leadership. I would be remiss not to recognize Mr. Murray Williams, Altus, Oklahoma, who is Chairman of the Cotton Board and my immediate superior; and Mr. W. T. Robertson, of Holly Ridge, Mississippi, who is Chairman of Cotton Incorporated. They as well as their officers and boards, render a great service to this industry.

But as good a job as we have done in the past, there is no question that we have to do an even better job, given current market conditions.

Recognizing the critical need to improve demand as well as efficiency, the Cotton Board has recommended approval of Cotton Incorporated's 1982 budget of \$22.5 million, up slightly from last year's almost \$22.1 million.

In making our recommendation to the U. S. Secretary of Agriculture, which is required under the enabling legislation that governs this program, we plan to give greater emphasis to growing international markets for cotton.

Already, Cotton Incorporated is moving ahead with plans just approved by Secretary Block to set up an office next year to serve the important European market. The office will be in London and will provide us excellent access to this "market of opportunity" for U. S. cotton.

Additionally, the Cotton Board has just recommended to the Secretary approval of Cotton Incorporated's plans to establish another office next year in Osaka, Japan, serving the tremendously important Far Eastern market.

Working in cooperation with other international agencies, Cotton Incorporated will be able to better serve the interests of the U. S. cotton grower in providing technical assistance, new product technology, and important fashion and color forecasting information to foreign textile mills in this important export market.

Recognizing that total world cotton consumption is projected to increase by 7 million bales by 1986, we feel that Cotton Incorporated - - - with the addition of its offices in Europe and the Far East to its U. S. facilities already in place - - - will be

positioned with a world-wide network to ensure that the U. S. producer gets his fair share of this market.

At the same time, we realize that the U. S. producer must be assured of a reasonable return on his investment, if he is to take advantage of these markets abroad as well as at home.

Obviously, we do not lack for challenges. We must accelerate efforts to cope with inflation and energy shortages; increase our efficiency and yields, and make better use of our resources so that we can be assured of the production that we need if our industry is to fulfill its potential for growth.

Recognizing the need for longer, more uniform cottons, we must also secure new, stronger varieties that meet the demands of the larger mills coming on stream with newer technology. The cotton also has to be cleaner to produce the high quality cloth that markets demand, as well as meet the OSHA regulations controlling cotton dust.

The solution to meeting the cotton dust regulations is well underway, with Cotton Incorporated contributing one-quarter of the funds in a \$8 million accelerated program involving government and industry. Through research into washed cottons and other areas to identify the causative agent of Byssinosis, it is our hope that this most serious problem will be solved, or at least contained by the early 1990's. Our goal is to deliver to the mill a bale of cotton free of any health problems.

But if we have challenges, we have plenty of opportunities, too.

Hybrid cottons came one step closer to commercialization this past year. They promise early maturity, insect resistance and improved fiber properties, without sacrificing yields.

In cottonseed research, results are promising in developing protein-rich products, in addition to the traditional uses of cottonseed oil. Consider that gossypol-free cottonseed is now a tasty, nutritious peanut butter substitute and a nut substitute in candies, as well as used in fortifying bread. Add to this the recent introduction of glandless cottonseed flour used with high protein breakfast cereals and crackers. The result is that cotton is a true food, fiber and feed crop, with a potential of four million acres of glandless seed in production by 1990.

Other areas of opportunity include management systems to control insects and cut yield loss without upsetting the ecological environment; better soil and water utilization, including more profitable crop rotations; new varieties that have higher salt tolerance and drought resistance, and ultimately, biochemical engineering which will enable us to change the heredity in plant cells.

Moving into the textile arena, Cotton Incorporated's years of research in the non-woven market represents an important breakthrough for cotton. This market has the potential of increasing

from 160,000 bales into a projected half million bale market within several years.

As we look to the 1990's, the challenges and opportunities in the textile market will be the most unique of all.

Mr. J. Nicholas Hahn, who has just become Chief Operating Officer of Cotton Incorporated and who is to succeed Mr. J. Dukes Wooters, Jr., as President and Chief Executive Officer next October, makes the point that all of cotton's customers will be tougher in the next decade.

The textile mill will be bigger, more professional, more selective in the fiber they buy, more research oriented, and most important, far more technologically advanced to compete against low wage countries importing finished goods into this country.

The textile mill's customer -- the apparel manufacturer -- will be more responsive to the needs of the marketplace and more innovative in terms of fabrics, finishes, colors, pattern and design.

Moving to the U. S. retailer, the next point along the marketing chain, the competition also will be severe. Retailers will be more aggressive, more interested in the bottom line, and more appealing to the discriminating consumer of the next decade.

The U. S. consumer will be the toughest customer of all. He -- and she -- are going to be more value conscious, more demanding in quality and service and more sophisticated. They'll be more affluent, older and better educated, too.

At every point along this market chain, the competition will be aggressively seeking market share at the expense of U. S. cotton. As no other commodity that I know has this problem, cotton has a unique challenge which makes our research and promotion efforts even more important.

Already spending an estimated \$300 million a year on research and promotion, the competition particularly on the synthetic side, will be bigger, much better financed, far more aggressive and far more knowledgeable in the next decade.

And while there may be some concern about rising energy costs at the present, those of us in the cotton industry must not lull ourselves into complacency because our friendly competition is already working on this, as evidenced by the recent merger of DuPont and Conoco.

This brings me to the first message that I want to leave with you today, ladies and gentlemen.

It is simply this. As good a job as we may have done in the past 10 years in cotton research and promotion, we are going to have to perform at even a higher level to meet the awesome challenges of the next decade.

Just consider the cost of advertising alone. In 1976, cotton had its biggest advertising year, spending \$5.4 million to reach more people with more cotton-selling messages. By 1990 because of inflation, experts estimate it will take \$16.1 million to repeat cotton's success of 1976.

Ladies and gentlemen, there should be no doubt about the need for total support for this program. If we achieve total support, we can invest more in research, promotion and marketing programs aimed at creating new markets for cotton in this country and around the world.

But if we are to have total support, then we need to do some things differently.

On the one hand, we need to do a much better job of communicating benefits of this program to producers.

The answer, in my opinion, is to respond with better information so that producers can make better business decisions about this investment.

If we present the facts logically and persuasively . . . if we build a convincing case that this program is an essential business cost especially in today's business climate . . . if we can successfully stress that the answers to many of our problems lie in increasing the commitment to research and promotion, then ladies and gentlemen, I am convinced that we will have their support.

But this is not all we must do if we are to secure the necessary funding so that our industry can fulfill its bright promise in the future.

We must also more effectively involve all sectors of the industry in promoting the importance of this program, because every segment has an enormous stake in its success.

So with your friends and neighbors . . .

With your commodity organizations, farm groups and leaders in agriculture with whom you associate . . .

With your key contacts in every facet of our industry . . .

We respectfully ask that you join with us in taking this very simple message to producers across the Cotton Belt.

It is in three parts really:

The first part is that our industry is absolutely dependent upon meaningful research.

The second is that promotion is just as important, as evidenced by the stunning successes in the past involving marketing programs for oranges, eggs, dairy, cotton and other products.

The third part is that NOW is the time, ladies and gentlemen . . . to support research and promotion.

Thank you.

Charles W. Shuman, Administrator
Farmers Home Administration

1982 Agricultural Outlook Conference, Session # 22
Washington, D.C.

For Release: 8:30 a.m. on Wednesday, November 4, 1981



The Farmers Home Administration will continue to carry out its mission in rural America under the guidelines of the President's economic program. FmHA's original mission, as intended by Congress, is to provide credit assistance to rural residents who are unable to obtain sufficient credit from commercial lenders.

In keeping with the President's efforts to balance the federal budget, FmHA, as other agencies, will operate on a somewhat reduced budget. In recent years, the agency had grown far beyond its original intent. It had become overburdened with tangential programs and a vastly expanded budget. It was never intended that FmHA go into direct competition with commercial banks and other lending institutions. Yet, as of January 1, 1981, the agency held 11 percent of all U.S. farm debt. FmHA's complete portfolio ranks with some of the largest banks in the country.

The previous emphasis on expansion had disrupted the agency's excellent record of careful loan making and close supervision and servicing. The agency has one of the best delivery systems in the government with nearly 2,000 county offices throughout the United States and its territories. The close one-on-one relationship with its borrowers is unique in the Federal government.

FmHA is reestablishing its tradition of emphasis on loan servicing through repeated farm visits, comprehensive farm and home plans, financial counseling and the use of expertise of other agencies within the Department of Agriculture.

The agency will also emphasize firm but reasonable efforts to collect on delinquent accounts. At the same time we will use all the economic tools at our command to help individual farmers and homeowners. When possible, we will graduate all borrowers to commercial credit.

The Farmers Home Administration intends to devote a major portion of its resources to assist beginning farmers to become successful full-time farm operators. In cooperation with other agencies in the Department of Agriculture, FmHA is providing this assistance, on a pilot project basis, through the new Full-Time Family Farmer and Rancher Development project. The purpose of the project is to help to ensure a continuing supply of family farmers to provide food and fiber for the nation.

Local county development committees will select candidates for the project who have been recommended by their peers in the community. The committee, made up of USDA professional and other local farm and credit experts, will review the candidate's experience and resources. Those who require financing beyond that available from commercial sources will be referred to FmHA. If they meet the qualifications, we will do what we can to get them started. It is expected that most of these borrowers will be able to graduate to commercial credit within 5 to 10 years.

Farmers Home will also continue to offer assistance to farmers that need it to recover from a natural disaster. We have taken a number of steps to make the farm emergency program more realistic for the farmer and less costly to the taxpayer. To assure that a uniform criteria is used in disaster declarations, the Secretary of Agriculture now makes such determinations rather than FmHA state directors when more than 25 farmers in a county suffer substantial losses. Low interest subsidized loans are available for actual losses due to disasters. Additional loans, if necessary, are available at rates which reflect the cost of borrowing to the Federal government. More reasonable ceilings have been placed on the total amount of FmHA assistance available following a disaster.

Housing and community programs are being directed to rural areas and small towns as opposed to "urbanizing" areas. These programs are meant to assist people in clearly defined rural areas who need help to obtain a decent standard of living.

The business and industry (B&I) loan guarantee program, which in a very short time grew to over \$1 billion a year, has largely served its purpose. When it was begun in 1974, there was little rural business credit available. Industry had not yet recognized the benefits of locating in rural areas. National migration was toward the larger cities. Today, the situation has reversed. Accordingly, the Administration has requested that the program be terminated.

Farmers Home remains committed to rural development. Emphasis will be placed on local expertise. FmHA involvement will stem mainly from the state, district and county levels. It is at these levels that the diversity of needs can be best recognized and where the person-to-person assistance is most effective.

Progress in rural development and in rural areas is strongly linked to an improvement in the nation's overall economy. The President's plan for economic recovery is essential to rural prosperity.

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1982 Agricultural Outlook Conference, Session #22

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"Improvement makes straight roads, but the crooked roads without improvement are roads of Genius." (Agee and Evans, p. 417).

I will provide a personal interpretation of this paradoxical thought as a means of suggesting the need for thoughtful reflection by those who assume the responsibility of proposing, developing and/or implementing public policies toward rural people. On too many occasions policies have been superimposed on rural areas to insure that point A is linked to point B in the most efficient manner -- obviously by a straight road. The realities of human behavior as expressed in political decisions and cultural values and acted out under constantly changing socio-economic conditions require the functional utility provided by crooked roads. The nature of the "improvements" may no longer resemble our original design as they are modified in response to unanticipated socio-political events.

Agee's juxtaposition of straight and crooked roads provides a useful analogy with which to undertake a reexamination of rural development policy.

My perspective is based on an analysis of three issues: (1) the past trends in the economy and their underlying causal forces, (2) the conceptual basis of rural development, and (3) the emerging social and technological environment with which policy toward rural America must cope. I will briefly explore each of these and offer some suggestions for future public policy.

Trends in the Economy and Their Underlying Causal Forces

The dimensions of the population turnaround of the past decade and associated changes in the economy have been thoroughly described by Beale (1977) and McCarthy and Morrison (1981). Here, I want to call

*I want to thank J. Paxton Marshall, Sandra S. Batie and Bernal L. Green for their assistance and stimulation in developing these ideas.

attention to three major trends of this period: (1) the general decline in the growth rate of non-farm goods production relative to tertiary (or service-producing) industries, with a very severe decline in manufacturing growth; (2) the decline in general population and employment growth rates in metropolitan areas, especially the larger central cities in the upper Midwest and Northeast, and (3) the relative shift in population growth and general economic activity toward smaller metro and submetro areas, especially, those in the South and Southwest (Ford).

These shifts in economic activity and the associated concurrent population movements stem from a range of important factors that include, but are not limited to: (1) the increases in income per capita and the high elasticity of demand for services; (2) the commercial and public provision of services that in an earlier era were provided by the nuclear or extended family; (3) the growing recognition of negative social externalities associated with dense, urban population concentrations; and (4) the recognition by business and industrial leaders of worker preferences for rural and small town living.

Recent projections made by the Bureau of Labor Statistics indicate that the top ten growth industries for the 1980s will all be service industries. Examples include wholesale and retail trade, business and medical services, state and local government, and banking and professional services. Substantial service growth in rural areas is possible because of the new rural settlement patterns depicted by these trends. The service sectors of rural communities are serving increasingly as important components of these communities' export base. Consider that as much as 28 percent of the total service production of 350 service firms in rural Wisconsin was exported from their local communities (Smith).

These events have occurred in a deliberate fashion. They represent the maturing of a post-industrial society as heralded by Daniel Bell, responses to international events, new technology, and national markets that have been guided, in part, by public decisions made on the national, state, and local levels (and I emphasize the importance of each level). To a significant degree, the population and economic changes of the past decade are the successful outcome of overt public policies designed to aid distressed rural areas, to promote a more balanced distribution of economic growth, and to reduce poverty and underemployment. Some of these policies are as old as our nation, many are imbedded in Jeffersonian thought, with the modern era beginning, perhaps, with the creation of the Tennessee Valley Authority in 1933.

Research has demonstrated that even the smallest communities can alter their economic future through public investments in selected services and facilities (Smith, Deaton, Kelch). Federal and state subsidies have aided local community efforts to improve the quality of rural infrastructure. For example, improved water and sewage facilities in small towns and rural areas have reduced fire insurance costs and provided high quality industrial sites for the expansion of business and industry. The development of the community college systems, recre-

ational facilities, and public welfare improvements have made rural areas more attractive to workers, managers, and the general public alike.

The Impact of Recent Changes

The incidence of poverty has declined since 1947 (Thurow, 1981). Events of the past decade suggest that further strides have been made in achieving balanced economic growth, expanding economic opportunity and reducing the incidence of poverty. The combined effect of public and private investments during this period has alleviated some of the most distressing cases of economic hardship. Even though poverty rates remain higher in the South and Southwest than for the entire nation, the incidence of poverty fell more rapidly in the sunbelt than in the nation for the 1969-1975 period (Darity). Rural industrialization has generally narrowed the income distribution spread in rural communities and increased income levels (Deaton and Landes). Whether these hard-won gains are sufficiently imbedded in a structural realignment of the economy or, instead, represent merely short-run results of heavy public subsidies must still be observed. Some of the benefits are almost surely offset by the costs borne by other areas of the country which have lost manufacturing jobs.

Those persons in the lowest income groups generally benefit more directly from improvements in national economic activity, even in the absence of an explicit distribution policy such as that advocated by Thurow (1979). A recent analysis of 69,000 employed persons in the South revealed that black females showed the most striking gains during the 1965-70 period, particularly in rural areas, but little if any gain during the 1970-75 period when the wages of white male workers continued to grow (White, Willis, Banks). The former period was a generally healthy national growth period, whereas the latter was marked by sharp economic fluctuations and a general downturn in the national economy. This finding supports earlier, similar findings by Gallaway and by Thurow (1981).

Targeted programs of vocational training bear little relationship (according to Choate) to the economic development needs of the places they serve. The impacts of such programs are swamped by national-scale economic forces partly because of improper design and partly because of limited funding. The evidence is overwhelming that the unskilled and untrained will remain outside the mainstream of the economy unless human resource development programs become integrated components of economic development strategies. This applies especially to rural economies. Again, we should be reminded that targeted programs are most effective during periods of a healthy, growing national economy. The population turnaround has created pressures on the public services of small towns and rural areas, particularly the educational sector.

Green and Ross have demonstrated that social systems undergoing rapid change experience some social disorganization, "...with the adaptive capacity influenced by economic and social factors operating in the larger community arena" (p. 36). Their landmark study indicated a need for requiring social and economic assessments of potentially impacted areas. They concluded that early planning involving a long-range perspective can help avoid substantial economic and social costs.

The Conceptual Basis of Rural Development

Deavers recently observed that "rural development policy involves deliberate action by federal, state, and local governments and private institutions and individuals to achieve three goals: (a) improved rural income levels and employment opportunities; (b) improved access by rural residents to adequate housing and essential community facilities and services; and (c) responsible use of rural resources and the rural environment to preserve the quality of rural life." Achieving these goals encompasses a broad range of public and private decisions directed toward shaping the quality of life and access to opportunity for rural residents. Clearly, the evidence cited above of improved rural infrastructure indicates that access to important services has improved in many rural communities.

Responsible public policy should view rural development as the process of making a publicly-prescribed minimum level of services available on a reasonably uniform basis.¹ The legal or constitutional flavor of this definition provides direction to public decisionmakers and a baseline for assessing progress toward program objectives. The definition calls for directing public policy in accordance with social norms. That the public is able and willing to define a socially acceptable "minimum" level of services to which citizens must be assured a "reasonable uniformity" of access is implied by the definition. This approach endorses the need for active citizen participation in defining goals and objectives as well as in evaluating the methods used and progress achieved in implementing specific programs.

Flexibility and responsiveness in program design is an implicit ingredient of rural development programs based on this premise of reasonable uniformity of access. Institutional innovation to assure adequate points of access are encouraged. Social science research has illustrated how reasonable uniformity of access could be established for rural health care (Hardy, Marshall and Faris) for community based development programs (Deaton), and rural education programs that encourage job creation (Parks).

Public policy is often frustrated because it does not take a wholistic approach to human and natural resource development within a context that promotes community building. Consequently, local citizens become alienated from government sponsored programs, from employers, and from each other (Redman). The recent migration from urban to rural areas represents, in part, an attempt to escape the more severe alienating forces of a depersonalized urban society (Deaton, Morgan, and Anshel). Rural areas will successfully accomodate the social and psychological needs of their burgeoning populations only if creative participatory planning is incorporated into rural development programs.

¹I am indebted to my colleague, J. Paxton Marshall, for suggesting this definition and discussing its implications.

Rural development policy must confront emerging problems of land settlement; retaining higher quality land for agricultural use, improving soil conservation, and adopting effective land use planning are example problems (Batie and Healy). The scope of relevant considerations is almost unbounded. However, deliberations should begin by carefully assessing what has been called a "New Land-Use Ethic" which would establish standards that

"...express a set of descriptions, prescriptions, and proscriptions grounded in the fundamental judgments a society makes about what constitutes a good society. The standards established by the ethic become the basis for evaluating both decision-making processes and the decisions the process produces" (Marshall, p. 2).

Establishing a land use ethic would undergird other rural development goals with a "wholistic" approach to the individual and the community. Ashworth has specified at least ten components of the concept of "wholeness." These include: control of destiny, sense of order, adequate water, food and clean air, shelter and privacy, meaningful and gainful employment, opportunities for recreation of mind and spirit, mobility, experience of visual delight, being in and contributing to the mainstream of tradition, and social integration. Clearly, rural development policy cannot be based on any narrower criteria since human development in its broadest context is the goal being pursued.

The Emerging Social and Technical Environment

There is irony in the unprecedented adjustment problems faced by rural communities across our nation at the time that the federal government is shifting responsibility back to state and local governments. Inflation and economic recession on the national level, and monetary adjustments on the international level are among the general factors that threaten to erode state and local control and create an environment of general uncertainty. We appear to be nearing a "watershed in collective consciousness" where a decision will have to be made about converting local community risks into "safety-conscious collective choices about how much risk is acceptable" (Wildavsky, p. 36). Three converging forces necessitate a reexamination of the environment in which this assessment will be made.

First, the policy direction being pursued by the Reagan Administration is placing greater responsibility on state and local units of government at a time of increasing financial and social risk. Whether local units will be able to respond effectively is not clear. The population turnaround suggests that rural areas probably have an enriched tax base of property and commercial sales. Small communities have higher ratios of property wealth to public expenditures than do urban areas. However, the daily tally sheets of local referendums illustrate the difficulty of eliciting public support for even the existing levels of service.

Complicating this picture of voter intransigence is readily observable evidence that local communities across the country are saddled with deteriorating physical infrastructures that will require even greater financial commitments in the near future. Unless we see a reversal of federal policy, these needs must be met out of local resources in a period that has seen the virtual extinction of the market for small town municipal bonds. A fiscal crisis in local public finance clearly exists. Significant improvements in productivity, critical as they are, will not alter the crisis.

The second national factor that increases economic uncertainty and threatens the fiscal structure of rural America is the effect on local economies of reduced federal expenditures for social services and regulatory agencies. This reduced flow of funds diminishes the countercyclical buffer that rural communities have benefited from, particularly since the early 1960's. Local commerce and local sales taxes have depended on federal funds and their multiplier effects to sustain business and public revenues during slow periods of national economic activity. The implications of the recent federal redirection of spending is just beginning to be realized by small towns and rural areas.

The third factor is the current program of phased deregulations of banking set in motion by the passage of the "Depository Institutions Deregulation and Monetary Control Act of 1980." With the aim of improving competition in local markets among banks, thrift, and money market institutions, the deregulations will (in the short-run) almost surely depress bank operating margins, and result in more bank mergers and larger size operations.

The presumed benefits of bringing outside funds into small communities and improving local efficiency, may accomplish the reverse: drain small communities of needed investment funds. Money flows quickly in both directions! That net benefits will be derived by small communities must still be demonstrated. Small town banks are now working under a great deal of uncertainty, afraid to engage in long-term lending, and anxiously awaiting the next set of changes periodically issued by the Deregulation Committee. Already, rural communities are suffering from the apparent disarray and seeming inconsistencies in the federal approach to deregulation of banking. An example is the recent policy reversal on increased interest rates on passbook savings.

In spite of these financial uncertainties, other demographic and technological developments promise rewards to small communities. The attractiveness of rural places to retirees has brought a stream of talented and vigorous people into many rural communities. These individuals offer financial resources and a pool of skills, wisdom, and leadership that often remains untapped, but could provide some of the needed human resources for more effective development programs. Some communities have already recognized this potential, and others should make concerted efforts to attract the elderly and engage their talents.

The revolution in information systems holds great potential for rural communities. Many service skills which formerly required rural residents to move to urban areas can now be exercised in the most remote

rural communities through computer relays. For example, an employee of a New York brokerage firm could literally conduct business affairs from a remote mountainside cabin with computer facilities.

Rural communities can more easily gain access to economic opportunity by making effective use of problem specific empirical information and data systems that enhance participatory decision-making. The information revolution has brought sophisticated data processing and analytical techniques into the councils of local governments. Fiscal impact models and micro data processors have improved grass roots planning. Expertise can be disseminated rapidly.

Cooperative extension work is rapidly coming to terms with these changes. Educational demands placed on research and government centers are growing more rapidly than research findings, reversing an historical trend that saw new knowledge stay ahead of our ability to apply that knowledge. This expanded access to improved knowledge will place pressure on the delivery systems of public and private services leading to institutional and technological innovations.

The outlook for rural development will be shaped by this dynamic environment. Our biggest error would be to ignore the changing landscape and the institutional pressures that will emerge. Creative policy should allow for continuous feedback and modification. The information obtained in this process will guide institutional and technical innovations.

Narrow concepts of rural development may create the straight roads that concerned Agee and Evans, but they will not reveal the intricacies of rural culture. Rural development policy must take into account the more aesthetically appealing crooked roads where the wholeness of humanity defines the twists and turns that constitute the quality of life toward which policy must be directed. We have forgotten the need for such humility in the past. After all, that is one reason why the book, Let Us Now Praise Famous Men, a documentary of the Great Depression, had to be written.

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OVERVIEW

Economic conditions in the farm sector have not been favorable during the past two years and current prospects suggest little improvement is likely for the next several months.

Under pressure from record agricultural production in the U.S. and weakening domestic and world demand, farm prices have declined through 1981. Prices received by farmers this fall are about 6 percent below a year ago and are at about the same level as two years ago. Crop production in the U.S. this year will be a record, up 14 percent from the 1980 drought-reduced harvest. World grain production is also at record levels this year while U.S. and world animal production is large. Significant price increases in the near future would come only with substantial increases in export demand and/or reduced crops in the Southern Hemisphere.

Growth in agricultural product consumption in the U.S. and overseas has not kept pace with growth in production. Following declines in 1980, real per capita income in the U.S. could rise only slightly this year. Real growth in most developed nations around the world has also been slower. This, along with the sharp appreciation of the dollar earlier this year has resulted in less-than-expected exports. Although some increase in demand is expected in the year ahead, real economic growth in the U.S. and abroad likely will continue sluggish.

Farm input prices have stabilized in recent months, but prices paid by farmers for production items are still about 5 percent above a year ago and almost 17 percent above two years ago. Record interest rates on the growing farm debt will more than offset the slowdown in other production costs, and will boost total production expenses 8 to 10 percent in 1981. If inflationary pressures in the general economy continue to subside, farm input prices will moderate in the year ahead. However, total interest expenses will probably rise substantially again in 1982. Nominal interest rates may decline, but likely will stay high by historical standards. Also, as retired debt at low interest rates is replaced by new debt at the higher rate, the average interest rate on all debt outstanding will continue to rise.

Many farmers are currently in a severe cash-flow squeeze as production expenses have risen faster than cash receipts for the second consecutive year. Current commodity price forecasts suggest no improvement is likely, at least through the middle of next year. Traditionally, farmers have been able to withstand short-term fluctuations in income by borrowing against farm

equity to cover production loans. However, record-high interest rates, slower rates of increase in land values, and low commodity prices will reduce credit availability to many operators.

When reviewing economic conditions in the farm sector, net farm income and cash flow are usually the focus of attention. It should be noted, however, that net income is only one measure of economic conditions in the farm sector. While net farm income declined substantially from 1979 to 1981, proprietors equity rose from an average of \$303,000 per farm on January 1, 1979 to \$379,000 on January 1, 1981--a 25 percent increase per farm in two years.

As farms have become more specialized over the years, aggregate income has become less descriptive of any particular group of farmers. Much of the decline in net farm income in 1980 and 1981, for example, was felt by the livestock sector and those crop producers hit by drought. In the year ahead, livestock receipts likely will gain relative to crop receipts. Thus, even though aggregate net income levels may be low for three consecutive years, all farmers will not share alike in those declines.

Many farmers have substantial off-farm income. Last year over 60 percent of total farm family income was from off-farm sources. Another major factor determining the economic condition of individual farmers today is their debt/equity position and reliance on credit. Farmers most severely impacted by current low commodity prices are those with recently purchased land or other assets, a high debt/asset ratio, and heavy reliance on purchased inputs requiring financing.

Cash Receipt Increases Slow

Cash receipts in 1981 will be up about 5 percent from 1980 with crop receipts up 7 percent, to about \$74 billion, and livestock receipts up 4 percent to \$70 billion. Prices received by farmers for livestock this year will be about the same as in 1980, but prices received for crops will be up about 7 percent. Cash receipts are currently expected to increase a modest 4 to 6 percent in 1982 reflecting increased crop and livestock marketings, but only slight increases in overall prices received by farmers.

In the livestock sector, lower cash receipts from cattle and calves in 1981 will be offset by higher receipts from hogs, poultry, and dairy. Cash receipts for cattle in 1981 will be down about 2 percent as a 5 percent reduction in cattle prices more than offset an estimated 3 percent increase in marketings. This year cattle prices will average lower than 1980, reflecting the increase in beef production and large total meat supply. Consumer demand has also been weak because of the slow growth of the general economy. Although beef production likely will increase again in 1982, cattle prices could also rise modestly if the demand picture improves. Receipts for cattle and calves in 1982, however, probably will still fall short of 1979 levels.

Hog receipts in 1981 will be up about 10 percent, reflecting reduced pork production but an increase in the price of barrows and gilts of about \$6 per 100 pounds. Even with the slowdown in the general economy, hog prices remained above 1980 levels throughout 1981. With an expected further decline in hog production in 1982, prices should average higher, resulting in a modest increase in hog receipts next year.

Receipts from broilers will be up about 7 percent in 1981 reflecting increases in production and slightly higher prices this year. Broiler production is expected to increase only slightly in 1982, but with some improvement in demand broiler prices will also be up again, increasing cash receipts as much as 10 percent.

Milk production in 1981 is expected to be up 3 percent and prices up 5 percent, pushing dairy cash receipts up about 8 percent this year. If milk support prices are not increased under the new farm legislation, dairy producers may begin to level off production next year, and dairy receipts would not increase significantly from 1981 levels.

As in 1980, crop receipts have risen more than livestock receipts this year. During the first half of 1981, reduced marketings from the drought-shortened 1980 crop and increased export demand kept crop prices and cash receipts well above year-earlier levels. During the second half of the year, record-high grain production and large harvests of other major crops combined with sluggish domestic and world demand, causing crop prices to fall below year-earlier levels. However, increased crop marketings offset lower prices, keeping cash receipts about even with year earlier levels in the second half. Increased marketings and lower prices will most likely prevail through the first half of 1982, moderating increases in crop receipts. Crop receipts during the second half of next year will be largely determined by the size of 1982 crops which will be planted next spring.

Food grain receipts in 1981 are expected to rise 12 percent as wheat receipts increase 10 percent and rice receipts rise about a fourth. With wheat prices for 1981 about even with 1980, all the gain in wheat receipts will come from increased marketings from the record large 1980 and 1981 wheat crops. Rice production is up 23 percent in 1981, far surpassing last year's record. Rice prices in calendar year 1981 will exceed 1980's level by 9 percent.

In 1982, food grain receipts may rise marginally if wheat production is reduced through a set-aside and prices rise modestly. Rice receipts in 1982 may stay near the 1981 level as large stocks and resulting price declines offset increased marketings.

Corn production is a record this year, up 22 percent from the small 1980 crop and 2 percent over the previous record crop in 1979. Corn receipts in 1981 may not rise much from last year's level, however, since most of this year's crop will be marketed in 1982. Corn prices and receipts were strong in the first half of the year, but with low second-half prices offsetting increased marketings, second half 1981 corn receipts will fall below year-earlier levels. This will leave 1981 corn receipts about the same as in 1980. Despite increased exports and feed use, 1982 corn prices may fall below the 1981 average. However, increased marketings from the record 1981 corn crop will offset lower corn prices, leaving 1982 corn receipts above 1981 by 6 to 8 percent.

Soybean receipts in 1981, like corn receipts, probably will not show much change from 1980 levels. With more than half of 1981 marketings coming out of the small 1980 crop, total soybean marketings will probably fall about 5 percent from 1980. Although soybean prices declined through 1981 as feed

use fell and world vegetable oil stocks rose, 1981 soybean prices will average about 4 percent higher than 1980, offsetting the decline in marketings. In 1982, soybean receipts should rise moderately with marketings up from 1981 and prices remaining near 1981 levels. Exports and feed use may fall below 1981 levels, but total domestic use will rise as crushings increase.

Cotton receipts in 1981 are expected to be up about 7 percent from 1980. Although 1981 cotton prices were down some, marketings in 1981 will rise about 11 percent over 1980, reflecting this year's large cotton crop. Roughly 60 percent of production is marketed in the current calendar year. Cotton exports were fairly strong in 1981 as other nations sought to build depleted inventories caused by last year's world production shortfall. Cotton supplies will be abundant through early 1982 as this year's large production exceeds projected consumption, resulting in substantial stock increases.

Cash receipts for vegetables in 1981 are up sharply in response to higher potato receipts and strong sales of other vegetables such as dry beans, tomatoes, and onions. Low potato production in 1980 depleted stocks and forced potato prices to historic highs last spring and summer, yielding record receipts for potato growers. A freeze in Florida last January damaged vegetable crops and pushed fresh market vegetable prices up substantially, thereby increasing receipts for growers not hurt by the freeze. For this year, fresh market vegetable prices will average almost 16 percent higher than 1981. Production of dried beans and potatoes are both up this fall. In 1982, vegetable receipts may decline slightly as prices for many vegetables are expected to fall. Receipts from potatoes and dried beans are both likely to decline as prices respond to the increased supplies.

Total receipts for fruits and tree nuts will likely rise about 5 percent in 1981 reflecting substantially larger supplies. Prices received by growers averaged lower, particularly for apples. Citrus supplies were reduced in 1981 resulting from the Florida freeze last winter and consequently citrus prices this spring were considerably higher than a year earlier. Production of almonds and walnuts was record large in 1981 and prices were lower, leading to only modest increases in receipts. In 1982, receipts from fruits and nuts will be modestly above 1981 levels as lower citrus production again leads to higher prices. Marketings of noncitrus fruits may also be reduced, leading to higher prices and receipts.

Tobacco receipts are likely to post a big gain in 1981 with production up 13 percent and farm prices up 17 percent. In 1982, tobacco receipts may level off if yields move back toward longer-term trends, causing production to decline. However, price gains may about offset lower marketings next year, stabilizing tobacco receipts near the 1981 level.

Production Expenses Slowing

Farm production expenses in 1981 are expected to increase about 9 percent, the smallest increase since 1977. Further moderation seems likely in the year ahead.

With some moderation in the underlying rate of inflation in the general economy, farm input price increases should also begin to moderate, especially for energy-based inputs such as fuel, fertilizer and chemicals. With the squeeze on farm income over the last two years, input use likely will not increase significantly. Consequently, farm production expenses in 1982 may rise only 6 to 9 percent, the smallest increase since 1975.

Table 1.--Prices Received and Paid by Farmers, 1977-81

	1977	1978	1979	1980	1981f
	----- Percent change from previous year -----				
Prices Received:					
Crops.....	- 2.3	6.2	8.9	8.0	7
Food grains	-22.5	22.2	19.9	12.2	1
Feed grains	-19.0	3.7	12.9	15.1	9
Cotton	1.4	-8.8	5.2	22.9	-5
Tobacco	7.3	9.2	7.9	6.5	13
Oil Crops	18.3	-6.7	10.2	-0.9	9
Fruits	25.9	47.8	-0.4	-12.2	-3
Vegetables	9.2	4.8	5.0	2.6	16
Livestock	-0.8	23.7	19.0	-2.4	1
Meat animals	-0.9	34.2	23.8	-6.3	-1
Dairy products	0.5	8.9	13.8	8.4	5
Poultry & eggs	-2.1	6.6	3.7	1.2	5
All Products	-1.5	15.1	14.5	2.2	4
Prices Paid:					
Production items	3.6	8.5	14.7	11.4	8
Feed	-2.4	2.0	11.8	12.6	10
Feeder livestock	2.9	39.6	32.4	-4.0	-5
Chemicals	-9.8	-6.2	2.0	6.7	9
Fertilizer	-2.2	-0.6	8.3	24.4	9
Fuels & energy	7.9	5.3	29.8	37.7	13
Farm/motor supplies :	0.5	3.9	10.5	17.0	10
Autos & trucks	10.4	5.8	10.3	5.5	15
Tractors	9.4	9.1	11.5	11.9	11
Building & fencing ..	6.5	7.8	9.8	7.8	6
Services & cash rent:	8.5	6.8	9.9	10.2	10
Prod. items, interest :					
Taxes & wages	4.8	8.8	15.0	11.8	8
f - forecast					

Farm production expenses for farm-origin inputs such as feed, purchased livestock, and seed make up about a fourth of total production expenses. Non-farm origin inputs such as fuel, fertilizer, chemicals, and repairs make up the remaining three-fourths. Farm-origin input costs are strongly influenced by prices received by farmers and therefore have increased very little in the past two years. However, non-farm origin input prices tend to closely follow the overall inflation rate, and have risen about a fourth from 1979 to 1981.

Feed prices were up about a tenth in 1981, reflecting last year's drought-reduced crop. However, reduced feed consumption will result in modest feed cost increases this year, largely reflecting lower production of pork and cattle feeding. Feed costs in 1982 are currently expected to remain about the same as this year as feed prices drop slightly, but feed use rises due to more cattle feeding and a turnaround in pork production.

Feeder livestock expenses decreased in 1981 as feeder livestock prices fell about 5 percent and livestock feeding was reduced. Feeder cattle make up most of feeder livestock sales and feeder steer prices in 1981 will average about \$6 to \$8 per 100 pounds below 1980 levels. Feeder pig prices were up, but these increases were not enough to offset the drop in feeder cattle prices. In the year ahead, feeder livestock expenses likely will increase significantly. Prices of feeders, both cattle and hogs, are expected to be up, and with improved livestock-feed price ratios more feeders will be purchased and placed on feed.

Seed costs may be up about one-fifth in 1981 as more acreage was planted and seed prices increased substantially. Although total acreage planted may be down some in 1982, higher seed prices next spring are expected to push up seed costs 5 to 10 percent.

Increases in interest rates have greater significance for the farm sector than ever before as agriculture has become more capital intensive and farmers finance a larger proportion of their annual operating costs. During the 1970's the farm sector's total debt increased an average 12 percent per year. Because of rising interest rates, interest expenses rose an average 17 percent per year during the 1970's and currently comprise about 13 percent of farmers' total production costs compared with about 7-1/2 percent ten years ago.

In 1981 total interest costs on real estate and non-real estate debt will reach about \$19 billion, a jump of nearly 20 percent from 1980. This is a result of increased debt outstanding and rising interest rates. The average interest rate on all debt outstanding in 1981 will likely be over 10 percent, a rise of nearly one percentage point from 1980. With moderation, or even some declines in the nominal interest rate on agricultural loans in 1982, the average rate on all debt outstanding will continue to rise as new loans carry a higher rate of interest than loans retired. The combination of higher average interest rates and continued rise in total debt outstanding suggest further substantial increases in total interest expenses for farmers in 1982.

Non-farm origin input prices may not increase as rapidly next year as in the past two years. Stabilizing prices for fuels and energy have had a large effect on slowing the growth rate in production expenses. Petroleum stocks have been large this year as consumption has declined in the U.S. and other countries, resulting in small increases in fuel prices. Following large increases of about one-third each year in 1979 and 1980, prices paid by farmers for fuels and energy will increase about 13 percent in 1981. With farm fuel consumption remaining about stable, expenses for fuel in 1981 will increase less than 15 percent over 1980. Barring unforeseen disruptions in the Mideast, fuel and energy costs in 1982 may further moderate, and rise 10 percent or less.

With energy costs slowing, fertilizer costs will increase about 12 percent in 1981 compared with an increase of over 25 percent in 1980. Fertilizer use is expected to be up slightly in 1981, in response to higher planted acreage, but fertilizer prices will increase less than 10 percent. Fertilizer use in 1982 may decline somewhat if planted acreage is lower. Fertilizer price increases next year are currently expected to be about the same as in 1981, resulting in an increase in fertilizer expenses of 10 percent or less.

Hired labor use this year likely will be about the same as 1980, but wages are expected to continue to increase at about the general inflation rate, boosting labor costs about 10 percent. In 1982, farm wages are expected to slip below the general inflation rate and labor costs may rise 6 to 7 percent.

Pesticide and other agricultural chemical expenses are expected to be up about 10 percent in 1981. Pesticide use will be up only slightly reflecting increased acreage, but prices have continued to increase at about the same rate as inflation. Pesticide expenses are currently expected to rise another 8 to 10 percent in 1982.

Cash Flow Squeezed

Although farm cash receipts have hit record-high levels each year since 1979, farmers' cash costs have risen faster, resulting in lower net cash income. Following a 17 percent increase in cash receipts in 1979, receipts rose only 3 percent in 1980 and are likely to grow only about 5 percent in 1981. Total cash expenses, however, will rise about 9 percent in 1980 and again in 1981, more than offsetting the modest receipt increases. Net cash income available to farmers for purchasing assets, loan retirement, and other expenditures has declined from record highs of \$37.6 billion in 1979 to \$33.0 billion in 1980, and will be down to about \$31 billion in 1981--an 18 percent decline in two years (see table 2).

Even if production costs moderate in the year ahead, to an increase of 6 to 9 percent, it now seems unlikely that commodity prices will strengthen enough to offset cost rises. Current prospects would indicate that cash receipts may increase in the range of about 4 to 6 percent in 1982. As a result, net cash income could decline another \$1 to \$3 billion, to the lowest nominal level since 1977.

In addition to cash receipts from the sale of agricultural products, the farm production sector also has other cash sources from real estate and nonreal estate business loans, net changes in currency and demand deposits,

and rent income from other farmers. A large proportion of the cash made available from loans would be expected to be used for the purchase of capital items--tractors, machinery and buildings. Net cash flow is the sum of net cash income from farming, loans, and rent, less capital expenditures, and is a measure of the change in cash available for household consumption, further business operations and purchases of farm real estate.

With the squeeze on farm income in 1980, farmers reduced their increase in borrowing from nearly \$21 billion in 1979 to under \$16 billion in 1980 (table 2). Capital expenditures were also reduced, but not as much as loans, resulting in a further drawdown in the farm sector cash flow. Current indications suggest borrowing during 1981 has picked up from the 1980 rate and farm debt could rise \$16 to \$20 billion this year. If capital expenditures remain near the reduced 1980 level of around \$18 billion, and with only modest increases in rent income this year, farm sector cash flow in 1981 could be about the same or slightly higher than 1980.

When measuring economic conditions in the farm sector in terms of the traditional net farm income accounts, which include income and expense imputations for the rental value of farm dwellings, the value of home consumption, depreciation and inventory changes, net incomes have been much more volatile and declines have been more dramatic since 1979. This has been partly due to the large component in production expenses for capital depreciation, but more importantly because of large inventory adjustments in recent years.

Between 1970 and 1973 net farm income jumped 135 percent followed by a decline of 45 percent through 1977. This cycle was then repeated with a 78 percent rise in net income between 1977 and 1979 followed by a 40 percent decline in 1980. After inventory adjustment, net farm income declined from a record level of \$32.7 billion in 1979 to \$19.9 billion in 1980, a drop of 39 percent. More than half of the decline (\$7.3 billion), however, was due to inventory change, as the bumper 1979 crops and resulting large carryover at the end of 1979 was followed by a drought-reduced crop in 1980 and the subsequent inventory drawdown.

This situation is now reversed as record crops this year will serve to raise inventories at the end of this year and add to net farm income. This has produced an unusual situation where cash incomes and net farm income before inventory adjustments will decline about \$2 to \$3 billion from 1980 to 1981, but net farm income after inventory adjustment in 1981 will total around \$22 billion, a gain of \$2 billion from 1980. Net income from farm sources will then average about \$9,100 per farm this year compared with \$8,180 in 1980.

The net farm income outlook for 1982 not only includes forecasts for next year's crops but also of carryover at the end of next year. Current prospects could be aggravated in coming months by large crops in the Southern Hemisphere and weak economic conditions throughout the world. Large 1982/83 world crops would further compound a large supply situation. In contrast, if Southern Hemisphere crops were reduced, foreign buyers began to aggressively bid for available supplies, and if world economic conditions improved dramatically in late 1982 in the face of small 1982/83 crops, a much stronger income

picture would result. The magnitude of swings in inventories and prices under such conditions are very large and will be a key determinant of the level of 1982 net farm income. Without knowing the level of 1982/83 U.S. commodity output or the potential usage based on world crop developments and economic conditions, the magnitude of the swings in commodity prices and inventories make forecasts made at this time highly tentative.

Despite the current uncertainties, there is little evidence of a good year for farm income in 1982. It would seem likely that cash income could be down another \$1 to \$3 billion. Declines in net farm income after inventory adjustment would be even greater, assuming a return to more normal crop yields in 1982. For the third consecutive year many farmers will need to reschedule debt and defer capital expenditures.

Table 2.--Net Cash Income ^{1/}

	1977	1978	1979	1980	1981f
----- Billion Dollars -----					
Cash Receipts:					
Crops	48.7	53.7	63.4	69.0	74
Livestock	<u>47.6</u>	<u>59.2</u>	<u>68.5</u>	<u>67.4</u>	<u>70</u>
Total	96.3	112.9	131.9	136.4	144
Government Payments	1.8	3.0	1.4	1.3	2
Other Cash Income	<u>1.6</u>	<u>1.7</u>	<u>2.1</u>	<u>2.2</u>	<u>2</u>
Total	99.7	117.6	135.4	139.9	148
Cash Expenses	<u>73.6</u>	<u>82.3</u>	<u>97.8</u>	<u>106.9</u>	<u>117</u>
Net Cash Farm Income	26.1	35.3	37.6	33.0	31
Change in Loans:					
Real Estate.....	6.6	6.5	10.9	8.6	10
Other	5.7	8.3	10.0	7.1	8
Change in Currency	0.1	0.1	0.1	0.1	0
Rent Income	<u>4.6</u>	<u>5.6</u>	<u>6.1</u>	<u>6.6</u>	<u>7</u>
Total	43.1	55.8	64.7	55.4	56
Capital Expenditures	<u>16.8</u>	<u>17.9</u>	<u>19.9</u>	<u>18.4</u>	<u>18</u>
Net Cash Flow	26.3	37.9	44.8	37.0	38

^{1/} Excludes farm households.

f - forecast

Farm Debt Increases

While net farm income is currently depressed, the value of farm sector assets has continued to rise somewhat faster than farm debt, resulting in an increase in farm equity. At the beginning of 1981, total assets of the farm sector, including households, were \$1.09 trillion. This was balanced by total liabilities of \$175 billion and proprietors equity of \$916 billion. While net farm income declined in 1980 and remained low in 1981, per farm equity at the beginning of 1981 was almost \$380,000. Serious cash flow problems over the last two years, however, have forced many farmers to borrow heavily against their equity to finance current-year farm operations.

Table 3.--Farm Income 1/

	: 1977	: 1978	: 1979	: 1980	: 1981f
	:	:	:	:	:
	----- Billion Dollars -----				
	:	:	:	:	:
Cash Receipts:	:	:	:	:	:
Crops	48.7	53.7	63.4	69.0	74
Livestock	<u>47.6</u>	<u>59.2</u>	<u>68.5</u>	<u>67.4</u>	<u>70</u>
	:	:	:	:	:
Total	96.3	112.9	131.9	136.4	144
	:	:	:	:	:
Government Payments	1.8	3.0	1.4	1.3	2
Other Income <u>2/</u>	<u>9.6</u>	<u>11.0</u>	<u>13.3</u>	<u>14.8</u>	<u>16</u>
	:	:	:	:	:
Total Income	107.7	126.9	146.6	152.5	162
Production Expenses	<u>90.3</u>	<u>101.1</u>	<u>119.2</u>	<u>130.7</u>	<u>143</u>
	:	:	:	:	:
Net Farm Income	:	:	:	:	:
Before Inventory Adj.	17.4	25.9	27.4	21.9	19
	:	:	:	:	:
Inventory Change	1.0	0.6	5.3	-2.0	3
	:	:	:	:	:
Net Farm Income	:	:	:	:	:
After Inventory Adj.	18.4	26.5	32.7	19.9	22
	:	:	:	:	:
Income Per Farm:	----- Dollars -----				
	:	:	:	:	:
Farm Sources	7,489	10,861	13,456	8,180	9,100
Off-farm Sources	<u>10,313</u>	<u>11,533</u>	<u>13,667</u>	<u>14,820</u>	<u>16,100</u>
	:	:	:	:	:
Total	17,802	22,394	27,123	23,000	25,200

1/ Includes farm households.

2/ Includes income from recreation, machine hire and custom work, the imputed value of farm operator dwellings and the value of farm products consumed on the farm.

f - forecast

Farm debt has nearly doubled in the past 5 years and has become a major source of increasing cash flow problems. The farm sector's debt servicing burden has increased even more sharply due to higher volume of debt, to greater reliance on higher open market interest rates and the roll-over of old debt at higher current rates. As a result the farm sector's debt-income ratio has doubled over the past two years.

Farmers have coped with cash flow problems by rescheduling debt payments, taking on more debt, and postponing large capital expenditures. Reflecting declines in net income during 1980, farmers tightened their belts and reduced capital expenditures by about 8 percent (see table 2), the first year-to-year decline since 1968. With lower capital expenditures, total debt also rose more slowly than in 1979. After two years of reduced incomes, current indications suggest farmers are continuing to curtail capital expenditures. However, debt outstanding may rise by 10 percent or more by January 1, 1982, as farmers borrow more heavily to cover current year operations. After two years of restricted cash flow, it has become increasingly difficult for farmers to service existing debt and after two years of deferred capital expenditures machinery and equipment need to be replaced. The availability of credit will become an even greater problem if asset values, particularly farmland values, rise more slowly or stabilize and lenders become less willing to extend credit secured by farm real estate.

Income Variability

The farm sector has become more diverse over the years and aggregate indicators are less useful for describing the economic conditions for any particular group of farmers. Net incomes are highly variable depending upon commodity produced, region, farm size, debt structure and off-farm opportunities.

Crop farmers have generally fared better than livestock farmers over the past two years. After deflating by the input price index, crop cash receipts in 1981 were only reduced about 4 percent from 1980, and 1980 receipts were the highest in several years. Deflated livestock receipts dropped 5 percent in 1981, but were 16 percent below 1979.

Within the crop sector, wheat and corn producers have had rising real receipts while deflated soybean receipts declined 18 percent over the period 1978-81. Crop farmers whose yields were severely reduced last year due to drought were not able to take advantage of high prices in 1980 and therefore likely had low incomes in 1980-81. Many crop farmers in the Eastern Corn Belt and Lake States, however, had record yields and many may have had the highest incomes ever. In the livestock sector, deflated receipts to cattlemen have declined 27 percent from 1979 to 1981 while dairy receipts have risen.

During the past two years one of the most important determinants of the economic condition of individual farmers has been their level of indebtedness and reliance on credit to finance farm operations. Well-established farmers with low debt and minimal credit needs will be better able to withstand temporary periods of cash flow declines than will new entrants to farming. Some farmers with recent large asset purchases financed at high interest rates may be forced to liquidation. Generally, large farms are more likely

to be overextended on debt. Farms in the smaller sales classes of less than \$10,000 of sales per year have debt to asset ratios of 5 to 7 percent compared with an average 20 percent for farms with sales of \$100,000 or more this year.

Total income of farm operator families depends importantly on off-farm sources of income. In 1980, farm operators averaged less than 40 percent of their total income from farming and over 60 percent from nonfarm sources. Operators of small farms, with total sales of less than \$5,000 of agricultural products per year, generally receive less than 10 percent of their total income from farm sources. For those farms with sales over \$100,000, however, farm income made up nearly three-fourths of the total income. Small farmers are more dependent on the general economy for their well being, but large farmers are affected greatly by the variability in farm income.

Summary

The farm sector has experienced a second and faces the possibility of a third year of low net income. Net cash income from farming in 1981 will be about 18 percent below 1979 peaks and further declines are possible in the year ahead. After adjusting for depreciation of capital assets and farm inventories, net income declines are even greater.

Record U.S. and world crop production, large livestock output, and relatively weak demand growth in the U.S. and abroad have combined to hold down farm receipts. The large volume of products to be marketed from the bumper 1981 harvest likely will keep farm prices low and limit increases in farm receipts, at least through mid-1982. Farm production expenses, led by increases in interest expenses, will rise as much or more than receipts, suggesting a continued squeeze on net income into 1982.

Farmers have coped with this cash flow problem by rescheduling payments, taking on more debt, and postponing large capital expenditures. However, after two years of cash flow declines, it has become difficult for some farmers to service existing debt. The debt-income ratio has doubled over the last two years. The availability of credit could become an even greater problem if asset values, particularly farmland values, rise more slowly or stabilize and lenders become less willing to extend credit secured by farm real estate.

The farm sector is not homogeneous and broad generalizations do not adequately describe economic conditions for all farmers. There are wide income variations according to commodity produced, region, size and tenure of operators. Well-established farmers with a large equity base are better able to withstand short-term declines in income than are new entrants to farming or those farmers who have recent large capital purchases financed at high interest rates. While some farmers are overextended, the farm sector still has a relatively low overall debt-equity ratio of 16 to 17 percent and has a substantial per-farm equity base.

Farm operator families also receive substantial income from off-farm sources. Although net income from farm sources continues relatively low in 1981, total income per farm may exceed \$25,000, second only to 1979's \$27,123.

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For Release:



George Hoffman has very capably summarized what can only be termed a very dismal farm income picture. He notes that the poor performance of this year follows on the heels of a sharp downturn in 1980. Perhaps most disparagingly--although not surprisingly--he sees little likelihood of improvement next year. In fact, he points out that farm income may be further eroded next year, although he acknowledges the many pivotal uncertainties that face us in 1982. He does suggest, however, that the heaviest burden of the depressed farm earnings will shift in 1982 from livestock producers to crop farmers.

I find no significant faults with the 1981 estimates that George has presented. For 1982, I tend to be somewhat less pessimistic than George, although our differences are minor. Since I don't object with the forecasts presented, let me utilize my time to recap the major estimates that George has given and then add some of my own comments and interpretations to the overall picture. In summarizing his estimates, I would like to recast them into a three-year perspective since we are in the midst of a three-year slide in farm sector earnings.

It has been pointed out that the growth in cash receipts has been very modest, particularly when viewed in terms of the highly inflationary environment that we face. The \$144 billion in cash receipts estimated for this year represents an increase of only 5 percent from last year and an increase of only 9 percent from two years ago. For the year ahead, it was suggested that the rise in cash receipts may again be held to about 5 percent. Overall, the forecasts imply a three-year increase of only 14 percent; short of the 17 percent annual increase that was achieved in 1978 and again in 1979.

In terms of production expenses, George notes that the annual increase in each of the past two years has been 9 to 10 percent. He is, however, looking for some moderation next year as reflected in the forecasted rise of 6 to 9 percent.

In terms of the three more commonly followed "bottom line" measures, George has suggested:

- Net cash income this year will likely fall to \$31 billion, a decline of 6 percent from last year and a decline of 18 percent from the 1979 peak. It was suggested that net cash income may decline another \$1 to \$3 billion in 1982.
- Net farm income before inventory adjustment was forecast to decline to \$19 billion this

year, down 13 percent from last year and down 31 percent from two years ago.

- Net farm income after inventory adjustment was forecast to rise about 10 percent this year, reaching the \$22 billion mark. The recovery, however, is almost inconsequential when we realize that net farm income would still be a third below the level of two years ago. For 1982, it was forecast that net farm income--both before and after inventory adjustment--would decline further, and that the decline would likely exceed the \$1 to \$3 billion slide expected in net cash income.

Let me now add a few of my own comments and interpretations of the farm income picture. I would like to start by complimenting George for something that he did not say; specifically that farm sector earnings the past two years, adjusted for inflation, have been the lowest since the Depression. Although true, such frequently heard comments clearly overstate the situation. Moreover, such comments are often incorrectly interpreted as a summary of the financial condition of farmers. The comments and the interpretations ignore three important factors.

First, such comments ignore the tremendous substitution of capital for labor that has occurred in agriculture in recent decades and contributed to a vast improvement in productivity and a substantial decline in farm numbers.

Second, such comments ignore the huge growth in off-farm earnings that farm operator families have enjoyed in recent decades.

Third, such comments ignore the huge increase in wealth that has accrued to owners of farm assets over the years. Farm operator families have received much of this wealth, although nonoperating landlords have also received a large share.

The following three comparisons illustrate the importance of these three factors. On a per farm basis, for instance, real farm earnings of farm operator families the past two years have been triple the levels that prevailed during the Depression and comparable to the levels that prevailed in the 1950s. Moreover, the purchasing power of total earnings per farm operator family the past two years--including earnings from farm sources as well as nonfarm sources--have been more than a fifth above the average annual level of the 1960s. Finally, the purchasing power of the equity in farm sector assets, on a per farm basis, at the beginning of this year was double the level of 10 years ago, 2½ times the level of 20 years ago, and 4½ times the level of 30 years ago.

In my view these comparisons depict a far more realistic picture of the financial health of farm operator families than do comparisons of farm sector earnings with the Depression era.

While conditions are not as bad as in the Depression, clearly the farm income picture is dismal. In my view, the most discouraging element in

the farm income picture is that it now seems probable that we will have three consecutive years of depressed sector earnings. That is a rarity, although it is not unique when compared to the mid-1950s. But there are a couple of factors that may render the current situation unique with respect to modern history. First, the current era of cyclically depressed farm earnings may be coinciding with the sustained, long-term efforts that will be needed to bring inflation under control. Second, the currently depressed farm sector earnings are coinciding with an apparent effort to scale back the government safety nets that in the past have cushioned the cyclical downswings in the agricultural sector. The withering of the safety net may be particularly apparent next year if an acreage reduction program for feed grains is announced to compliment the program already imposed for wheat producers and if producer participation in those programs is as low as has been suggested in earlier sessions of this conference.

The yet unanswered question is what will happen to farm asset values and to the debt/equity balance in agriculture as a result of three consecutive years of depressed farm earnings, a withering government safety net for agriculture, and the sustained efforts needed to bring inflation under control. Although perhaps not probable, it is possible that the historical data base of the past three or four decades may not provide the answer to this question.

In a related area, let me comment briefly on an issue that concerns many people; namely that there is likely to be a significant increase in farm auction liquidation sales if farm income is depressed for another year.

There is little doubt that more than the usual number of farmers will be forced to liquidate some or all of their operation if farm income remains depressed and debt-servicing charges remain high. The number involving real estate foreclosures and/or forced liquidations, however, will remain small. Even if the number of farm real estate foreclosures and/or forced liquidations doubles, it will still affect no more than 2 or 3 out of every 1,000 farms in this country. This would be far below the numbers that many people conjure up when procrastinating about the liquidation prospects from depressed farm earnings.

When thinking about forced liquidation, the tendency is to view it as a very negative development causing hardship for the affected individuals. Clearly, there are unfortunate casualties in a farm income squeeze. In particular, young individuals trying to get started in farming and farmers who bear the brunt of weather-related production shortfalls are among the unfortunates affected by an income squeeze.

But also among those most vulnerable to the downturn in farm earnings are farmers who greatly leveraged their large equity and income gains of the 1970s and embarked on an expansive growth program. In many cases, the popular media described these individuals as the success stories of the 1970s. In retrospect, it now appears the depressed of earnings of the early 1980s may not support some of those leveraged growth plans, resulting in forced liquidations. But we should realize that even with partial or complete liquidation, many of these former "fast-track" farm operators will emerge with greater net worths than their more modest expansion-minded counterparts simply because they did leverage heavily at a handsome return in past years. My point is simply that liquidation of highly leveraged farms, while not

conducive to the individuals desired scope of operation, may not be that detrimental to the individuals net worth.

In closing, let me comment briefly on what may be a shortcoming in the method of tabulating farm sector cash receipts. The estimate of cash receipts for any given commodity in any given month represents the amount of the commodity marketed by farmers in that month times the average price received by farmers for the commodity in that month. If my understanding is correct, the shortcoming of this system is that it assumes the commodity is priced in the month that it is marketed. With the greatly increased commodity price volatility of recent years and the increasing reliance of farmers on forward pricing and/or hedging of their commodities, the possibility exists that the current system may not be accurately reflecting farm sector receipts.

To illustrate my point, I would remind you that the December 1981 corn futures option briefly traded in excess of \$3.85 a bushel. To the extent that farmers forward contracted and/or hedged their 1981 corn when the December option was trading at that level, and subsequently delivered their grain in December, farm sector cash receipts would likely be higher than what will be reflected on the basis of average prices received by farmers in December. If I am correct that this shortcoming exists, I would encourage efforts to more accurately portray actual pricing transactions for farm commodities.

Steven R. Guebert, Farm Credit Administration

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It is my pleasure to be here this morning. Indeed, I must say that I am much more pleased to be here under the current circumstances than was the case when I last addressed a group in this auditorium. Several of you may recall that occasion. It was in January 1979. The audience was smaller, but I knew that I had the undivided attention of everyone in the room. At that time, I was head of USDA's farm income estimates, and I had the opportunity of explaining to several hundred protesting farmers just how in the world my staff came up with farm income estimates showing a 40% jump in net farm income for 1978 over 1977.

Actually, once we got into the details of the estimates, tensions in the room were greatly eased. Nearly all of the increase in cash receipts during 1978 had been result of higher livestock prices. Crop receipts, especially for the grains and cotton, had held fairly flat or were on a downward trend for several years.

My reasons for causing you to reflect back to several years ago are two-fold. First, conditions in the agricultural economy are bleaker now than they were three or four years ago. This may not be fully realized, but if things do not improve within the next couple of months, the extent of financial difficulties will come into much sharper focus.

My second reason for reflecting back is to point out how quickly things can change when we are looking at farm income prospects. At the outset of 1979, farm income prospects were not particularly bright. Yet, as events unfolded, it turned out to be a reasonably good year. And late that year, as we looked into 1980, it was fairly clear that even with bullish export projections, our record crops were likely to create downward price pressure and a sizable drop in net farm income. The actual drop was somewhat greater than projected--it turned out at the bottom end of our forecast range. And I am sure we all recall the rosy forecast presented one year ago for the current year.

In his speech on Monday, Dawson Ahalt mentioned that the income prospects for 1982 are volatile, but that there is little reason for predicting a good year. I concur. I also find very little to disagree with in the more detailed presentation by George Hoffman. For those waiting to hear a specific number, I do not have one. I will say that under present agricultural commodity and economic conditions, there is little doubt in my mind that we would see a sizable drop in net farm income during 1982. But I doubt that anyone would have much confidence in predicting that the current supply/demand conditions facing agriculture will hold constant in 1982. I think that nearly anyone who analyzes this situation would say that improvement is the more likely possibility. The only areas of disagreement would be on how much and how soon.

USDA's analysis does assume some strengthening through a stronger second-half economy and a return to more normal, trend crop production. Unfortunately, it will take a quicker or more pronounced change to keep net farm income from falling in 1982. I would also note that even if improvement does start earlier, there will be some sluggishness in translating a higher gross income into a higher net. Much of the improvement on the gross side would go toward increased outlays for inputs. I think we would see input prices rising faster than they otherwise will and also farmers would purchase greater quantities as well as some items that they otherwise would forego. As far as agri-business is concerned, and I would think most farmers as well, this latter development would be a much more desirable situation even though the net may be only marginally higher.

In part, what I am saying is that net farm income is not a very revealing measure of overall economic activity in agriculture. I fully appreciate that net farm income is a politically sensitive number and that it can make for good press material. And I am not suggesting that we can or should ignore some of the problems it may be signaling. But, as far as most of you in this audience are concerned, the economic viability of the agricultural economy may be a more straight forward function of changes in farm cash receipts that it is of what happens to that residual item known as net farm income.

I say this for pragmatic reasons. One is that I have heard from a number of agri-business people over the years who say they have found farm cash receipts to be a better predictor of their business activity than have net farm income measures. Secondly, I suggest to you that farm cash receipts as estimated in the farm income accounts of USDA are much more attuned to the real world counterpart than is the thing we call net farm income. In short, farm input purchases are made out of gross; net is what is available after expenses are paid, for consumption or expansion.

Having said this, I note that the outlook for cash receipts that George has presented is not encouraging. But it is less bleak than the net income forecast. For 1982 he called for an increase of 4 to 6 percent, or for about 6 to 9 billion dollars. As I am sure that George would agree, there is a fairly large forecast error associated with that prediction.

To illustrate how sensitive farm cash receipts are to changes in farm commodity prices, consider how much of a price change it would take for any one of several major commodities to generate or for that matter lose, a billion dollars of cash receipts. For soybeans it is about 50¢/bu; corn 20¢/bu; wheat 40¢/bu; and cotton about 17¢/cwt. On the livestock side, for beef cattle it is about \$2/cwt, hogs \$4.25/cwt. and broilers about 6¢/lb. For many of these major commodities, the projected 1981/82 price ranges that have been presented during the conference exceed these changes. Further, several of these commodity prices tend to move together; so a swing in a group of prices can add to cash receipts rather quickly.

I would like to make several comments about the effect of high interest rates on farm income. George stated that interest charges now account for about 13 percent of farm production expenses. That is for the nation's farms as a

whole. Obviously, interest is a much more dominant cost element for those producers who are highly leveraged with external financing. Interest rates also affect the seasonal prices of stored farm commodities through discounts for carrying charges. Thus, high interest rates affect farmers both on the receipt and the expense side of their accounts.

In my judgement interest rates are affecting net farm earnings more now than in any past period. Yet, I would agree with a comment in the paper by David Lins from yesterday's credit session that high interest rates are not the major cause of this year's low net farm income. Farm prices and earnings are weak primarily due to abundant crop and livestock supplies which are currently outpacing our domestic and foreign demand.

I would also note that interest income is probably an important part of that nonfarm income or off-the-farm income that George has referred to in his presentation. Among people with self-employment income from farming, interest and dividends are the most frequently cited sources of nonfarm income though these have not been leading in terms of dollars. And of course for those producers in a tighter cash flow and heavy debt situation, we would not expect them to have much interest earning capacity.

I would like to conclude with a few comments about the near term cash flow situation. I understand that next month there may be about a billion dollars in deficiency payments going to producers. This would be mainly to wheat and cotton growers with a little going to rice. A second point is that I would expect grain producers to make significant use of Commodity Credit Corporation loans--both under the regular program and the farmer-held reserve part. Nearly all producers are eligible and the interest rate and storage payments are fairly attractive. Finally, with the weakening economy and possible falling of interest rates, at least for a brief period, there may be some commodity price response providing opportunities to command better prices.

Mary C. Jarratt
Assistant Secretary for Food and Consumer Services
U. S. Department of Agriculture

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I am pleased to be here and to have an opportunity to talk to you about this year's initiatives and next year's harvests. There are many things being discussed at this conference, of course--economics, specific commodities, agricultural research and natural resources--but I think it is fair to say that good human nutrition is one of the accomplishments we have to achieve--those of us who produce, process or distribute the harvests, as well, I hope, as those of us who may seem to be planting statistics and regulations and reaping confusion.

I am proud to say that we live in the most productive country on earth. Twenty-two percent of working Americans draw their income as well as their sustenance from agriculture--from the farmer in the field to the clerk behind the supermarket counter. What they do--and what you do--is most important to this country and to the world.

I am here today to discuss what might be called the last link in the chain from the field to the table. Millions of Americans in need look to the U.S. Department of Agriculture for food assistance. Millions more are benefited--in health and well being--by the nutrition guidance USDA provides.

This morning's program will describe the directions in which our four functional nutrition areas are moving. Let me begin by naming them. The Agricultural Research Service has five research laboratories doing basic research on nutrition. The Human Nutrition Information Service conducts food consumption surveys and it will continue to play an active role in support of private sector initiatives. The Extension Service is our educational delivery system, and the Food and Nutrition Service provides those in need with access to food. In my comments this morning, I will discuss new directions for the Food and Nutrition Service and the Human Nutrition Information Service.

First, let's look at USDA's domestic food programs--programs which expanded dramatically in both participation and cost during the past decade--the Food Stamp Program and the Child Nutrition Programs, including school lunch and breakfast, the summer food service program, the special milk program, the special supplemental food program for women, infants and children, commonly known as WIC.

It is the intention of this Administration to refocus these food programs so that they provide nutrition to those most in need. A plethora of overlapping benefits flowing from the food programs and other assistance

entitlements has led to a public perception of abuse and, in fact, often distorted the original intent of the programs. For example, eighty-four percent of food stamp recipients receive benefits from other programs. Also, free school lunch is provided to thirty-eight percent of food stamp households.

Program growth will be moderated and multiple benefits will be limited through both legislation and regulatory reform. As this takes place, increasing emphasis on better management should restore public confidence in the integrity and effectiveness of the food programs, particularly the food stamp and school lunch programs, which will remain the cornerstones of food assistance.

The Omnibus Reconciliation Act signed in August contained a number of provisions to reduce the food stamp program. Nevertheless, it is still a very large program. Using projections based on current law, it will reach 22 million persons this fiscal year. The new law made a number of changes and, in particular, makes it impossible for higher income persons to be construed as eligible for the food stamp program. Until now, food stamp eligibility was based on net income after a series of possible deductions. Under the new law, income limitations will be imposed strictly. The family's gross income cannot be more than 130 percent of poverty level, unless there is an elderly or disabled person in the home. This means a family of four must be grossing below 11,000 dollars yearly to qualify for stamps. There were other changes:

--Until now, when a family went in to apply for food stamps in the middle of the month, they got them for the full month. Under the new law, food stamps will be given only for the number of days remaining in the month.

--Until now, a person who qualified for various welfare aids might be in a nursing home at government expense, or otherwise placed in an institution where meals were provided as part of daily operating expense. Still, that individual could receive food stamps. That duplication has ended.

--Until now, persons who were members of the same family and lived together in the same house could qualify individually for food stamps. That way, parents would get stamps, and any children living at home old enough to be considered adults could also get stamps. Now, one household will get stamps.

--Until now, strikers could get food stamps. The new rules make food stamps available to strikers only when the family income is low enough to qualify for help before the strike, with no additional food stamps to make up for wages lost because of the strike.

--Until now, twice-a-year cost-of-living increases have pushed up food stamp allotments at an inflationary pace. These increases will be limited in the future.

The Administration's commitment to the integrity of the food stamp program is demonstrated by authorizing anti-fraud activities such as the requirement for photo identification cards in urban areas and by increased monitoring of coupon redemption activities. There has been a similar change in child

nutrition programs where improved verification of income eligibility is required. These necessary measures for good management are long overdue.

The new law also shifts the emphasis in the child feeding programs toward directing more benefits to needy children. The programs continue to provide for meals to children from all income levels, although support for meals which go to non-needy children is reduced.

We plan to carefully survey and assess the effects of these changes in the school lunch program. Only preliminary and anecdotal information is available at this time. We know, for instance, that four-tenths of one percent of schools participating in the school lunch program have dropped out. A variety of factors, together or singly, could account for this program reduction--lower enrollment, decreased state and local support, or the federal subsidy reduction of eleven cents per meal for middle and upper income children.

Most of the states have told us that as a result of program changes, efficiencies in local food service operations and in the lunchroom are being encouraged. The local initiatives clearly support the Administration's position that the best decisionmakers are those closest to the scene. Provided flexibility in managing their own programs, school food service authorities can live within budget constraints. The most common kind of changes that appear to be happening are:

- Economies in the amount of labor used
- Emphasis on better portion control
- Eliminating desserts as part of the meal pattern
- Increased dependence on a la carte sales to subsidize operating losses
- Limited menu cycles based on known student preferences

Also, states and school food authorities indicate a desire to use more bonus commodities, particularly dairy products, which we encourage. Purchase and distribution of surplus foods continue to be a basic function of FNS, and we want to see that maximum use is made of commodities.

The Department is also reviewing program changes that could enable schools and institutions to cut the cost of producing meals. For example, regulatory burdens will be lightened and schools and institutions provided with more flexibility concerning meal pattern requirements. The proposed meal pattern changes which were recently withdrawn due to public misperception are illustrative of this effort. This proposal sought to provide greater flexibility in making savings at the local school level, as well as allowing for regional preferences and nutritional alternatives at less cost.

The states, with whom we cooperatively administer the child feeding programs, will face less paper requirements such as state plans and cost accounting data, although a sufficient number of reports will remain to assure that the programs are operated effectively.

The Reagan Administration believes the best policy for assisting low income groups is a reduction in dependency provided through a growing national economy. When we cannot provide everything to everybody, we must take the resources we have and focus on those most in need. This might require lowering income eligibility levels or reducing benefits to those relatively better off, or it might mean setting service to those within eligible groups under fixed rather than entitlement style appropriations. It may mean giving the states fixed amounts of money to spend, and letting them determine how it is to be spent, particularly for the smaller food programs.

Consideration must be given to increasing state and local discretion so state and local officials can better tailor programs to local conditions. In the last decade, most administrations in Washington promised more program discretion, yet their actions have been quite different. Our recent regulatory actions in food stamps and our public task forces on rule simplification in child nutrition and food stamp programs stand as exceptions to the past.

We are looking at new approaches and new issues. Through it all, USDA will maintain its concern for the food and nutrition needs of the nation, especially its low income citizens.

Now, let me turn to the Human Nutrition Information Service.

One of the new Administration's first actions was to reorganize USDA. That resulted in joining nutrition information programs in a new agency--the Human Nutrition Information Service--thus, elevating nutrition information to agency status, a first in the Federal Government.

The Department of Agriculture has long had a major responsibility for providing human nutrition information and education. The Human Nutrition Information Service will continue to develop practical and usable research-based information--and to work with interested groups to maximize the benefits of this information.

I have asked the HNIS staff to give top priority to four tasks:

--Developing the National Nutrition Monitoring System

--Improving the efficiency of the Nutrient Data Bank

--Increasing USDA's efforts in professional education

--Extending the Food and Nutrition Information Center's
lending services

On that first priority, we have moved forward in a significant new direction for nutrition policy and information. The Secretaries of Agriculture and Health and Human Services have accepted a joint implementation plan for a comprehensive national nutrition monitoring system. We submitted the plan to the Congress last month.

The National Nutrition Monitoring System includes a broad range of activities to find out periodically in a systematic way how well the American people eat. The new implementation plan will incorporate the Department of Health and Human Services' National Health and Nutrition Examination Survey, and USDA's Nationwide Food Consumption Survey into a coordinated

system. This means developing a compatible survey plan that both USDA and Health and Human Services can use.

The Departments will jointly sponsor two data users' conferences. These conferences will review the continuing and emerging needs for information on dietary intakes, household food consumption, and nutritional status.

Other steps in the plan call for converting in Fiscal Year 1985 the individual intake portion of the Nationwide Food Consumption Survey to a longitudinal individual intake survey and conducting the first full-fledged coordinated survey by both Departments in FY 1987.

As promising as is nutrition monitoring, another HNIS priority is equally significant--improving the efficiency of the National Nutrient Data Bank. HNIS has released seven sections of the revised Agriculture Handbook No. 8. Another five sections are nearing completion, and we hope to have the entire revision ready by 1985.

We are now revising the operations of the Nutrient Data Bank to improve data handling and processing. Based on food consumption surveys, we are developing a computerized recipe file that will allow us to analyze the ingredients in mixed foods which are increasingly part of the American diet.

Another area of activity is applying computerized data base information to evaluate nutrient analysis systems. This will enable users of nutrient analysis systems to check for common errors and deficiencies of operation.

And another project underway is a study of how dietary intake surveys can be simplified. By using an abbreviated nutrient data base, it may be possible to conduct them in a more timely and cost efficient manner.

Looking at the third priority for HNIS, professional education, I am pleased to report that we held our first 50 State video teleconference in September. Extension specialists and land grant university nutrition researchers were able to communicate across the nation and to consider updates on USDA's nutrition research.

We are planning with the Department of Health and Human Services, sponsorship of a second nationwide teleconference on infant feeding. We will tune in extension specialists and researchers again, while adding public health and WIC nutritionists.

Finally, under the lending services priority, the Human Nutrition Information Service is expanding its clientele to make materials available to school districts and individual schools, including food service personnel. We will also make material available to head start and other day care services, and to WIC and commodity supplemental food program personnel.

Along these lines, this Administration will build on its partnership with local units of government and the private sector. HNIS and the Extension Service, for example, are working with the American Red Cross to develop a new consumer course in nutrition that will be offered in communities across the nation. We are exploring, as well, cooperative nutrition information programs with private industry. Through these expansive initiatives, we hope to see more information going to both professionals and the public.

Let me conclude by saying that President Reagan and Secretary Block have laid down a gauntlet--a gauntlet for us to build efficiency and flexibility into our food and nutrition programs.

It is a big challenge--one from which this Administration will not retreat. We hope we can count on help and support from those who share a concern for the future of USDA's human nutrition programs.

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The aim of human nutrition is for every person to eat a diet throughout life that contributes maximally to health and to well being. We are still a long way from achieving that aim. Possibly no person eats a diet in this day and age that contributes maximally to health. It is evident that there is an increasing awareness among individuals and governments that something must be done to improve nutrition. The current brisk sale of books on nutrition particularly those books which advocate fad diets as a means of reducing body weight and to improve health attest to the concerns of individuals.

During the past ten years presidential commissions, congressional investigations, countless numbers of reports by non-profit institutions advocating health and improved nutrition have further stimulated increased public activity in this area.

A number of less developed countries have even realized the importance of good nutrition to achieve improved health of their countries and have formulated national nutrition policies, an aim which the United States has attempted to achieve but which it has not.

There are several complementary areas of nutrition research which must be pursued in order to reach our objectives. These include continued research on the nutrient requirements at all stages of the life cycle; the nutrient composition of foods with particular emphasis on assessing the nutrient content of foods that are available; improved techniques for the assessment of nutritional status of individuals and of population groups as well as the socio-economic factors forces and trends that result in malnutrition; and finally nutrition education research. In the latter case, the development of the technology for making available appropriate diets as well as educational techniques for assuring that people will utilize these diets looms as perhaps one of the most important aspects of nutritional research in the near future.

When one considers the results of tragedies of malnutrition throughout the world, many observers believe that simply making sufficient food available is the answer to proper nutrition. It is clear, however, that increased knowledge of human nutrition will be needed to avoid malnutrition, inspite of the fact that we must also overcome major economic, political and cultural barriers.

Contrary to the common view that knowledge in the field of nutritional sciences was essentially completed with the discovery of the last vitamin, precise knowledge of human nutrition has many gaps, and continued research in the areas of the gaps should have as profound an impact on man's health as did the discovery of the essential nutrients.

The nutritional status of individuals or population groups is often used as a basis for making political decisions to improve the nutritional status of the individuals or populations, yet present techniques for evaluating types of malnutrition other than the obvious case of undernutrition are extremely imprecise. Development of new methodologies for detecting subtle nutritional deficiencies is urgently needed. The long term effects of modest deficiencies and imbalances or excesses of nutrients need exploration. The role of nonnutrient components of foods, such as fiber content and food additives should be scientifically documented and not based on anecdotal experience. The specific role of diet in the prevention of diseases must be better established. With the increase use of drugs as therapeutic agents, it has become apparent that some drugs increase the requirement of specific nutrients while others inhibit the metabolism of certain foods. The metabolic interaction of drugs and nutrients is now a promising area of research particularly in people over 50 years of age.

While much of the necessary knowledge in nutrition can be acquired through the use of experimental animals, the application to man must inevitably involve the use of humans for testing. This increases the cost for human nutrition research, but the results of such experimentation bring about the precise answers that are needed to solve the problems.

Thus far my discussion has been in generalities. Let me get down to specifics. Our plan in the USDA has been to increase both the intramural and extramural support of research in human nutrition.

Looking ahead to the unexplored frontiers of nutrition in the 1980's, I see the U.S. Department of Agriculture developing a twofold approach.

First we will be researching the hard questions remaining in human nutrition. Second, we will be doing a better job of educating the public about nutrition.

We see eight top priority questions for human nutrition research for the 1980s. They represent a consensus among several recent major human nutrition studies.

The first researchable question is: What should people eat?

Answers on major diet deficiencies have been relatively easy to obtain. We already have learned enough to control major nutrition deficiency diseases in the United States. You might say we have answered the easy questions. We have, in a sense, "skimmed off the cream" in certain branches of human nutrition research. What remains is to find the answers that are more elusive and require innovative research methods to obtain.

We need research on the nutrition requirements of persons in all stages of

life. Particularly crucial are requirements for the prenatal stage, for 6-to 23 month old infants, pre-school youngsters, adolescents, women of childbearing age and the aged.

More information is needed on how nutrition relates to intellectual and emotional growth, pregnancy, lactation, menopause, and work.

Studies need to be conducted that will relate the level of nutrient intake to the prevention and moderation of degenerative processes. They should show us the effect of vitamin and trace element supplementation on the physical performance, health, and well-being of the elderly.

We need to identify the nutrients required for various levels of work function and performance. With such information, an individual could select a diet to fit the work needs for a day, a week, or a year -- and vary that diet as the needs change. Such a diet would not only save food expenses, but also would improve performance at work and at leisure.

Research is needed on obesity, the most widespread nutritional disorder in the U. S. Obesity is a primary risk factor for diabetes and cardiovascular disease. Currently, about 30 percent of middle-aged American males and 40 percent of the females are considered obese.

Despite the magnitude of this problem the fundamental causes remain obscure. The public spends large sums on diet foods and weight reduction schemes and has poor understanding of the basic mechanisms, benefits, and risks.

The second and third researchable questions are: What are people actually eating, and How Does this affect their nutritional health?

American supermarkets today offer consumers the opportunity to choose from among some 11,000 different products. New products are introduced almost daily. Other products disappear from the shelves. Our food supply is a kaleidoscope of constantly changing packages, products, formulas, and conveniences.

The result is that people's eating patterns are likely to be changing faster than we can monitor them with present techniques. Therefore, the first order of business is to revise the methods we use to find out what individuals eat, and find new ways to measure the nutritional impact.

Presently, the Federal Government uses two principal means of monitoring American diets.

First is the National Food Consumption Survey conducted once every 10 years by the Department of Agriculture.

The second principal method of monitoring diets and nutrition is the Health and Nutrition Evaluation Survey (HANES), conducted by HHS's National Center of Health Statistics, with help from the Center for Disease Control. It provides historical, laboratory, and clinical data on the health and nutrition status of a sample of 50,000 individuals.

There are serious limitations in both the methods and the timing of the surveys. A 10-year interval between USDA's food consumption surveys is too long to keep up with today's rapid changes in foods and eating habits. It also means the survey does not mesh with the nutrition data of the HANES survey.

So the Food and Agricultural Act of 1977 directs both our departments jointly to develop a comprehensive nutritional monitoring program.

We want a system that will in effect ring a bell when Federal nutrition intervention is warranted.

The system also has to supply information that will help determine what kind of intervention is needed.

The proposed system will include monitoring of nutrients in foods and food groups. It would provide new data to USDA's Nutrient Data Bank.

It would analyze meals offered as fast foods and TV dinners.

Most importantly, it would integrate the information from USDA's National Food Consumption Survey (NFCS) and HHS's Health and Nutrition Examination Survey (HANES).

If the proposed integration is implemented, our survey -- NFCS -- would collect data on an ongoing basis -- to make the data more timely.

The fourth question is: What factors actually shape people's eating habits?

Efforts to formulate national nutritional policies or to design intervention programs, educational programs, or possible regulatory actions need to be based on knowledge of the factors affecting consumer choices.

These factors include price, income, family size and composition, advertising and packaging, labeling, wholesale and retail marketing practices, convenience of preparation, education, health status, and individual and family attitudes.

We should identify factors most readily influenced by education and information.

We should focus on eating habits of such vulnerable groups as pregnant women, infants, and the elderly.

The fifth question is: What happens to our food from its origins on the farm until we eat it, and how do all the steps in between affect the safety, quality, and nutritional value of our diets?

Data is lacking on the amounts of important nutrients that occur in foods. Much of the current information is obsolete because of changes in agricultural production, because of the introduction of new varieties and processing methods, and because of new storage and transportation facilities.

Here are the research needs:

- (1) Investigation of the factors affecting the ability of people to utilize nutrients in specific foods, as well as factors affecting the chemical form of the nutrient, in relationship to other nutrients, and the presence of inhibitors.
- (2) Study of the nutrient changes in foods that occur after harvest or slaughter and during processing and distribution.
- (3) Determination of the social and economic feasibility -- and nutrient possibilities -- of new or improved food processes.
- (4) Conversion of scientific findings from public and private laboratories into readily useful information for consumers, public agencies, and private businesses and organizations.

We need to develop improved methods for food composition analysis. The methods currently available for analysis of many of the known nutrients are slow and imprecise. For some nutrients, no standard analytical methods exist.

The sixth question is: How do government interventions and nutrition education programs affect the health, nutritional status, and performance of the people they are intended for?

This is one of the most difficult questions to answer. Clearly we need to develop better methodologies for measuring the effectiveness of such programs.

We have a long way to go in designing information programs that effectively combat food and nutrition misinformation, inform the public on food safety, and encourage people to change their food habits. We need to determine which communication tools work best in getting people to modify their food choices.

Priority must be given to designing and carrying out surveys on diet practices to determine which groups in our population are most vulnerable to poor food habits. More work should be done to evaluate alternative food intervention programs and to find better ways to test evaluations of food fortification.

The seventh question is: What are the nutritional effects of agricultural and other U. S. Government policies and regulator programs?

Currently, there are no studies underway to find the impact of various government policies on the nutritional health of our people. This is an area we must address if we are to arrive at a coherent, comprehensive nutrition policy. It means you must look not just at the government policies directly related to food production and distribution, but also at many others that relate indirectly to nutrition but nonetheless have a profound effect on eating patterns.

More specifically, we need research on the nutritional effects of government activities in establishing and enforcing food grades and standards; packaging, labeling, and advertising requirements; and other measures to regulate marketing practices.

We need to know the nutritional impact of government crop adjustment programs of our international trade policies, and grain reserves.

How is human nutrition affected by food production strategies, agricultural research and cooperative extension programs, and rural credit services? Beyond those programs directly related to food, we need to look at the effects on nutrition of welfare and other income subsidies, income taxes, manpower policies, health, environmental health, and other general government policies.

We must be particularly concerned about the effects of government policies on those most vulnerable to malnutrition -- the poor, the young, and the elderly.

The eighth question is: What are the special considerations we must take into account in helping to meet the dietary needs of people in other countries?

From 500 million to 1 billion people in this world suffer from extreme malnutrition and hunger.

Our research should assist all countries, but especially those whose people face extreme hardship. Therefore, the design of our studies must take into account a range of circumstances that may differ widely from our own.

This is an imposing set of priority questions. We at USDA are taking steps to find the answers.

We are giving human nutrition research major emphasis. This year we will spend about \$40 million on human nutrition research. In addition, the universities cooperating with us, as well as other cooperators, probably will spend one-half that amount, resulting in a total of about \$60 million in this fiscal year for human nutrition research.

We have a Competitive Grants Research program which included \$3 million for human nutrition research in FY 1981. The program is open to all researchers-public and private, government and universities.

Within USDA, the major group conducting human nutrition research is ARS.

It conducts research at five laboratories at:

- (1) Beltsville Human Nutrition Research Center,
- (2) Grand Forks Human Nutrition Research Center,
- (3) Human Nutrition Research Center on Aging at Tufts University, Boston,
- (4) Children's Nutrition Research Center at Baylor College of Medicine, Houston, and
- (5) Western Human Nutrition Research Center, San Francisco

In the following areas:

- (1) human requirements for nutrients; and
- (2) food composition and improvement.

Also under Science and Education are:

-- Cooperative Research, which funds research at State Land grant universities, encompassing nutrition requirements, diet surveys, relation of diet to disease, food composition, and many other areas, and

-- Extension, which supports nutrition education programs across the country through the State and county cooperative extension system.

-- Technical Information Service, which provides nutrition information at the National Agricultural Library.

Beyond Science and Education, USDA's Food and Consumer Services has a new group called Human Nutrition Information Service which does research on consumer choices, dietary guidance, food consumption, and nutrient data bank. And its FNS supports studies on food program effectiveness.

The Human Nutrition Information Service conducts its research at the Consumer Nutrition Center at Hyattsville and through the Nutrition Information group in Washington, D.C.

Also, USDA's Economics, Statistics and Cooperative Service does research on consumer choices, food consumption, and domestic food programs.

My rather brief survey of USDA research is far from exhaustive, but it gives you a general idea of some of the steps we are taking now to find answers to the priority questions.

INITIATIVES IN NUTRITION EDUCATION FOR THE 80's BY EXTENSION SERVICE

Other speakers at this Nutrition Session of the Annual Food and Agricultural Outlook Conference are discussing "new directions with respect to nutrition policy and information in this administration," "human nutrition research in ARS", and "future directions of USDA food programs."

All of us are to relate to "Human Nutrition -- Initiatives for the 80's"

Where do the Extension Service staffs at the Federal, State and county level fit into introducing new measures and/or new initiatives in human nutrition?

Historically, even before legislation created the Extension Service, "Home Agents" were meeting with women to disseminate nutrition information and held demonstrations on canning and food safety.

At the outset of the 1980's, widespread interest in nutrition continues because of its identification as an important factor in the maintenance of public health. A release in 1977 by the Senate Committee on Nutrition and Human Needs of the Dietary Goals for the United States was indicative of government concern about what Americans eat and how their diets affect their health. Scientists' reaction to the Dietary Goals has led to the formation of Dietary Guidelines by USDA and HEW. This interest has Extension thrust in nutrition education.

Extension Food and Nutrition programs have been estimated to reach 30 million families of all ethnic and socio-economic backgrounds through the efforts of 5,000 professionals and 600,000 volunteers. The Expanded Food and Nutrition Education Program (EFNEP), provides intensive education usually in the form of home visits to about 313,000 families during a year. To date, 1,900,000 families have been reached by the program.

Nutrition Has a High Priority by Extension in the 80's

We will continue the role of disseminating food and nutrition information as the Extension Services support the New Initiatives in Home Economics as outlined by the U.S. Department of Agriculture.

- o An ECOP Home Economics Subcommittee Task Force on National Trends and Family Education Needs in the 80's listed food and nutrition as one of seven major areas of concern.
- o Nutrition is one of the four initiatives for emphasis during the 80's.
- o The Department's Delegation of Authority paper emphasizes the importance of nutrition education and information dissemination through the Department.

Examples of our efforts to move forward include:

Plans are underway to involve a small group representing Extension and the Human Nutrition Information Service to develop a memorandum of understanding for clarifying agency roles, delineating responsibilities and documenting opportunities for agency cooperative efforts in nutrition education. The plan calls for concentrated work during this week. The group will be co-chaired by Catherine Wotecki (HNIS) and Evelyn Johnson (ES) and will include two State Extension nutritionists.

We are developing a proposed Memorandum of Understanding between USDA and Extension Service and the National Red Cross to prepare nutrition education materials for use by Red Cross Chapters. This memorandum is in the process of clearance and will be presented to ECOP this week.

Joint National Extension Committee for the 80's

Additional focus on the mission and goals of Extension will result from a National Joint USDA/NASULGC Extension Committee which is being cochaired by Ray

Lett, Executive Assistant to Secretary Block, and a university president. The purpose of this new committee is to help give guidance and direction for CES in the 80's.

The 20 leaders from throughout the nation being invited to serve on this committee include officials from USDA, university presidents, State Extension Directors, 1890 Administrators, representatives of the county Extension staff, lay leaders, and others.

Extension Service Resources Committed to Food and Nutrition Education

The total resources of Extension devoted to food and nutrition programs are approximately \$69,700,000 (projected FY-82). This supports 5,091 staff years -- a large number of this staff (3,700) are paraprofessionals working in the EFNEP program. The Extension nutrition program (budget and staff years) can be summarized in four key areas:

1. Nutrient requirement and relationship of nutrition to health maintenance--\$16.8 million and 1,644 staff years;
2. Dietary intake and nutritional status monitoring and surveillance--\$2.7 million and 269 staff years;
3. Attitudes and behaviors toward food, food selection, food preparation and education on food composition--\$26.4 million;
4. Education on food safety and home food preservation--\$6.1 million and 598 staff years.

Reorganization in Extension

From my viewpoint, the Secretary of Agriculture John Block showed his continued confidence in the ability of County Extension Agents and Extension in general to help him achieve his goals when he recently reorganized the Department to make Extension Service an agency again.

The Secretary has stated on numerous occasions that research and Extension are important priorities of his administration.

In a recent speech, the Secretary said, "The Department of Agriculture has a very strong responsibility to food and human nutrition information, education and research. This is not a responsibility we are taking lightly. We believe that the actions we have taken so far give a clear indication of our willingness to fulfill our responsibilities in this partnership."

Extension reorganization will include:

- o Family Education and Food and Nutrition units will be recombined and entitled, "Home Economics and Human Nutrition." (Proposed for clearance) The rationale for the changes are that it will: (a) provide for a wholistic approach for addressing issues facing individuals and families; (b) maintain identity and visibility for nutrition within the Department; and (c) provide for greater compatibility with State Extension structures and programming approaches. Thus, we will have five program units at the Federal level; namely, Home Economics and Human Nutrition, Agricultural Programs, 4-H Youth, Natural Resources, and Community and Rural Development.
- o Our capability in program evaluation will be strengthened through the reassignment of this function to Extension. Evaluation will be a part of a program support group entitled, "Program Development, Evaluation, and Management Systems."

Expanded Food and Nutrition Education Program

The Extension Service was given the leadership responsibility of introducing the Expanded Food and Nutrition Education Program (EFNEP) by the Department 12 years ago. The goal was to teach low-income families, especially those with young children, to acquire knowledge, skills and attitudes necessary to change behavior and improve their diets.

What has happened?

- Documented data show a total of 1.7 million families have been enrolled and have learned the importance of the essentials of nutrition.
- They have increased knowledge on how to select and buy food that satisfies nutritional needs.
- They have learned how to better manage resources such as food stamps.
- They have been taught how to improve production of food in gardens and how to store food safely.

Food recall reports from the field indicate an increasing ability to prepare and serve more nutritious meals and has resulted in improved diets and health for the total family.

Continuous efforts have been made to improve program delivery and program management to provide opportunities for more families to enter the program. Sixteen EFNEP/Food Stamp pilot projects funded by a \$2 million transfer from the Food and Nutrition Service attempted to explore improved efficiency while maintaining effectiveness achieved when families are taught on a one-to-one and small-group teaching situation. The EFNEP pilot projects were experimental variations of the traditional EFNEP approach that test ways to increase Food Stamp recipients participation in EFNEP and to increase the cost-effectiveness of educational interventions. An analysis of EFNEP pilot projects participation revealed the following points:

- o Lessons tailored to individual homemakers' interests and needs is associated with a lower dropout rate than visits using a structured curriculum that permits less individualization.
- o Participation of Food Stamp recipients dramatically increased. The proportion of pilot project participants that received Food Stamps ranged from 33 percent to 100 percent.
- o In the projects where more than one method was tested, the one-to-one and small group teaching methods were the most effective in bringing about behavior change.

As a result of FY 80 projects, specific program delivery methods were identified for further testing on a systematic basis. In FY 81, \$2 million (with FNS and Extension contributing equally) was budgeted to test three educational methods:

1. Limited one-to-one contact plus group lessons;
2. Limited one-to-one contact plus group lessons supplemented by telephone contacts, and
3. Limited one-to-one contact plus mailed lessons supplemented by telephone contacts.

Ten States have been funded to test these methods with six of the States participating in a national study to measure the effectiveness. A national orientation workshop for participating States was conducted 2 weeks ago. FNS is monitoring the interagency evaluation (over \$400,000). The project will continue through April 1983.

A Memorandum of Agreement between Extension and the Food and Nutrition Service provides the funding for this project and is in response to the Food and Agriculture Act of 1977.

EFNEP Youth Study in Five States

It is our understanding that the Department-initiated EFNEP study, will not be completed until sometime after February 1982. Preliminary results have not been released. An EFNEP youth study is currently being conducted in five States as a part of the initial study.

We anticipate outcomes of this study to identify a number of areas which we are already working on as a result of the EFNEP/GAO studies and our own program reviews. These areas include improved administrative and management practices in program operation; ways to provide more efficiency in program delivery while maintaining effectiveness achieved through one-to-one teaching approach is needed; and methods to improve program effectiveness/efficiency through

identification, communication and assessment of State goals effect on each unit (county's) work is currently be explained through review of POW and program review.

Improved organizational and methodology approaches for the development of a quality 4-H EFNEP program will be emphasized. We will review and assess ways to cope with the impact of inflation on human resources and funding in an attempt to target the program in the next year, and increased coordination within the program and establish a more effective cooperation with other nutrition programs will continue to receive attention.

Reach Youth With Nutrition Education

County agents and volunteer leaders were teaching daughters and mothers nutrition in the early "canning clubs" before Extension Service was officially created in 1914!

As you know, the main thrust to reach youth with nutrition information now is through 4-H programs. For instance:

In 1980, a total of 1.7 million boys and girls were enrolled in three 4-H Food and Nurition projects. The 4-H Food and Nutrition enrollment is nearly 35 percent of the total 4-H enrollment.

In cooperation with the National 4-H Council, new nutritional materials for 9-12 year olds is now available nationally. This project book will emphasize physical fitness. The 32-page workbook is entitled "Fit It All Together, Food for Fun and Fitness." An accompanying guide for volunteer leaders will also be available. The format of these new materials is journalistic and closely

coordinated with the content and format of Food I and the 1979 USDA Yearbook of Agriculture "What's to Eat?"

Food Preservation Research Base Is Inadequate

Rising food cost, changes in the labor force, and other economic factors have caused an increased interest in home food production and preservation. For example, the nationwide food consumption survey in 1976 showed the percentages of households engaged in freezing food activities more than doubled--increasing from 24 to 55 percent. The percentage of households canning food remained the same at 35 percent.

In spite of this evidence of the need to update our knowledge related to food preservation and safety, only a very insignificant amount of money is currently being spent on home food preservation and food safety projects.

In Cooperative State Research projects as of October 1980, there were seven listed as "home food preservation" with funding of \$114,200 supporting 1.9 staff years. Five additional projects on "food safety" had funding of \$89,200 and supported 2.2 staff years.

The Agricultural Research Service has only limited funding earmarked for projects in food preservation and food safety.

Extension Service has funded for \$14,000 from a discretionary fund in 1981 a special project entitled "Critical Review of Home Preservation Literature and Current Research". This project is expected to be finished September 30, 1982.

Infant Nutrition Education Programs

Infant and maternal nutrition is provided through Extension programs that focus on young families.

Infant nutrition is a program thrust of Extension, and it has been identified as one of the five top priority areas in State Extension Food and Nutrition programming.

Extension infant nutrition programs include those women for whom pregnancy is a high risk -- the low-income and teenage - as well as the general public. In a recent survey of State Extension Services, 90 percent reported nutrition education was provided for pregnant women and mothers of infants. Breast-feeding information was provided by 82 percent of the States.

An example of special effort by a State is Colorado where Extension Service is developing an educational packet on infant feeding for Native Americans. Also, we have reports from States helping migrants and refugees with infant nutrition tailored to meet their specific needs.

Diabetes Mellitus is a serious major public health problem in the United States. The disease affects an estimated 10 million Americans and its prevalence in the population seems to be increasing. Awareness of these facts and the need for preventive health measures has encouraged Cooperative Extension Services to aid in the control of diabetes through nutrition education.

Approximately 24 percent of the States report cooperative efforts with other health professionals in presenting diabetes education programs.

As you know; State Extension nutritionists and county home economists often refer people needing help to other appropriate agencies and organizations in the local area to provide special or in-depth help Extension resources do not cover. A survey has shown 72 percent of the State Extension Services were involved in interagency cooperative efforts.

Using Computers and Electronic Media to Reach People In the 80's

Changes in life style and demand by our clientele have made it mandatory that Extension programs use electronic media and computers as well as our old friends the telephone and the mass media today.

A recent survey shows that over 700 county Extension offices now have access to a computer terminal and some have micro computers. Before the decade of the 80's is over, I expect most of the 3,100 county offices in the nation will be served by a computer terminal. That is an easy prediction to make -- our customers will demand it!

The Extension Service State home economics staffs are preparing software programs to use computer techniques. For instance, a survey in April 1980 revealed 28 States had 41 titles for computer and calculator programs for home economists to use.

The sub-group of the National Extension Committee on Computer Utilization and Application has recommended that the Extension Committee on Organization and Policy (ECOP) create, in cooperation with the Extension Service, USDA, a task force to review and develop a course of action to establish a national Extension computer center.

You will probably be using a national computer-telephone communications system in the 1980's called "Electronic Mail". A total of 43 State Extension Services are now using this system with my office in Washington, D.C., other offices in Extension and USDA. The system stores messages and you take them at your convenience avoiding catching people at their desks. A message can be sent to several addresses with one entry and copies to anyone on the system. In a

matter of a few minutes, the Federal Extension Service can send human nutrition information to all the State Extension Services on the Electronic Mail system.

Summary

Secretary of Agriculture John Block has pointed out that this country's population is growing 5,000 each day and world 300,000! He said, "We are talking about an endless rise in the number of people to be taught the basics of good health through nutrition."

In Extension, we will do our very best to provide technical and research information on food and nutrition through Federal, State and County professional and volunteer staffs.

The Federal and State Extension Services are looking forward to working with the new Human Nutrition Information Service. We welcome the opportunity to have increased nutrition information to disseminate to the public as we have since 1914.

Extension will continue to emphasize outreach to the low-income and minorities as well as the rural and urban and young families with the latest information and initiatives in nutrition. And, we will continue to cooperate and work with other agencies and private groups and organizations who will also contribute to nutrition education in the 1980's. There is certainly plenty of need to challenge all of us!

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Agricultural Meteorologists, and Norton D. Strommen, Chief Meteorologist,
World Agricultural Outlook Board

1982 Agricultural Outlook Conference, Session # 25

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Crop yields are subject to large variations from projected trends due primarily to the effects of weather prior to and during the crop cycle. The impact of anomalous weather depends, to a large extent, on existing crop conditions and the stage of development. The 1981 growing season was no exception as several major agricultural areas were subjected to the erratic behavior of the weather.

In the United States, persistent wet weather during the spring and early summer in much of the Corn Belt delayed crop plantings in most areas and by up to a month in the eastern section. The late growing season posed potentially serious problems for farmers. In particular, the crucial reproductive stages of development would occur later than normal, coinciding climatically with the warmest month of the year--August--also frequently the month of greatest moisture stress. Due to the late start, concern was high that an early frost might end the growing season prematurely before crops ripened. However, generally favorable weather during the summer and early fall produced good to excellent crop yields in much of the Corn Belt.

In the USSR, the 1981 growing season for grains began favorably with adequate moisture for early growth. However, episodes of hot, dry weather during crucial growth stages caused a rapid depletion of moisture supplies resulting in crop yields well below the anticipated levels for the third consecutive year. The probability of three successive unfavorable grain yield years is extremely low, but the adverse weather conditions during these three years were not at all similar. In 1979, the effects of early season moisture stress could not be overcome by variable rainfall patterns as the season progressed. In 1980, excessive moisture caused delays in planting, crop lodging, harvest delays, and eventual abandonment in some areas as the winter season set in.

In Asia, the early withdrawal of the Indian Monsoon has reduced crop prospects, especially for grains harvested in the early spring. Unfavorably dry weather is posing problems for crops still to be harvested in the Southern Hemisphere.

With this brief summary of the 1981 growing season in mind, let's review the present agricultural weather situation and some preliminary insights into prospects for the 1982 crops. The present moisture situation and climatological expectations form the basis for this overview.

With autumn harvests mostly complete in major Northern Hemisphere agricultural areas, attention now is focused on moisture availability for sowing and emergence of winter grains and preseason moisture conditions for next spring's planting season. Adequate soil moisture at sowing is essential for crop germination, emergence and establishment. For winter wheat, in particular, adequate rainfall during the growing season may not fully compensate for the ill-effects of poor autumn emergence. Similarly, in spring wheat areas, preseason moisture accumulated after fall harvest is directly related to potential of crop yields. Thus, the initial indicator of crop prospects is already being formulated in the Northern Hemisphere wheat areas.

A summary of moisture conditions for both national and international crop areas follows. Figure 1 highlights the agricultural weather situation for Northern Hemisphere winter grains and Southern Hemisphere crops to be harvested in the next several months.

NATIONAL SITUATION

United States: In contrast to the widespread moisture deficits prevalent during the 1980 growing season, 1981 summer rainfall was unusually heavy from southern Texas to the western Great Lakes. Some areas received twice the normal amount for the season. However, the Southeast was somewhat drier than normal, a pattern which continued into October. As a result, present soil moisture supplies range from adequate to surplus in portions of the Northeast and Northern Great Lakes region, short in much of the Southeast, and, short to adequate in nearly all other crop areas. Mid-October rains, slowing fieldwork in the south-central Plains and the western two-thirds of the Corn Belt, increased soil moisture supplies in these areas. The most serious moisture deficit remains in the Southeast and mid-Atlantic Coast States where marginally dry weather has persisted throughout most of the growing season. Less than average rainfall during the past several months in eastern Montana also is causing short sub-soil moisture supplies.

Winter Wheat: For much of the hard red winter wheat area of the Great Plains and the white winter wheat area of the Pacific Northwest, autumn sowing has progressed at a relatively normal pace. Emergence has been rated mostly good in these areas as top-soil moisture supplies have been adequate for good germination and early seedling establishment prior to winter dormancy. Sub-soil moisture reserves in the Plains are mostly adequate, providing a favorable outlook for early spring growth. The soft red winter wheat areas of the Corn Belt and the Southeastern United States show sharply contrasting moisture conditions, however. Autumn sowing in the Corn Belt has fallen behind both last year as well as the long-term average due primarily to the late harvest of summer crops. Moisture supplies are generally adequate for emergence and germination of winter wheat. Late plantings, however, may limit autumn growth prior to dormancy, potentially reducing the resistance of the plants to winter's low temperatures. This, of course, depends on a number of factors, including the severity of cold weather and snow cover. In the Southeastern U.S., the problem is inadequate moisture for proper germination and emergence. Soil moisture supplies are especially short in Mississippi, Georgia and South Carolina. As a result, winter wheat stands in these areas are rated poor to fair.

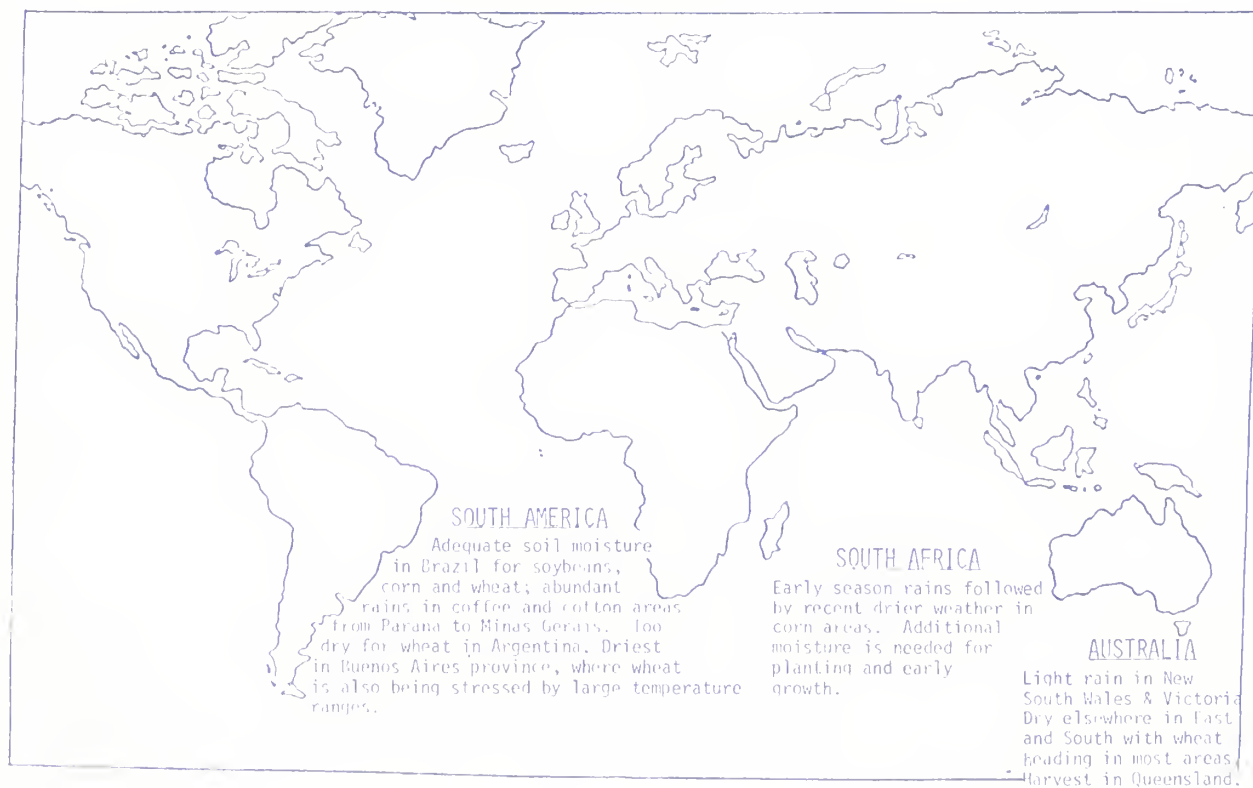
AGRICULTURAL WEATHER HIGHLIGHTS
NORTHERN HEMISPHERE WINTER GRAINS

DATE OCTOBER 22, 1981



AGRICULTURAL WEATHER HIGHLIGHTS
SOUTHERN HEMISPHERE CROPS

DATE OCTOBER 22, 1981



Spring Wheat: A seasonal rainfall pattern during the summer and early fall in the northern Great Plains kept soil conditions from becoming excessively dry at the end of the growing season. Some areas of South Dakota have low soil moisture reserves. Thus, timely spring rains will be required to provide favorable growth conditions for spring wheat.

Corn/Soybeans: The persistently wet weather during the 1981 growing season in the Corn Belt will manifest itself next spring in adequate sub-soil moisture supplies throughout most of the region. The late harvest, however, has pushed autumn ploughing far behind schedule. Thus, favorable spring weather will be essential for land preparation and sowing of crops to offset the delayed agricultural season of this past year.

Thus, with the exception of the Southeast, generally favorable moisture conditions offer an optimistic early outlook for crop growth and development during the 1982 growing season. The biggest contrast between this year and last year at this time is in the Central Plains where a more favorable moisture pattern exists. However, the Southeast is again too dry and will need significant winter and spring rains to replenish soil moisture reserves. But, a heavy winter precipitation pattern in the northern Corn Belt may again cause planting delays as experienced this past spring due to excessive wetness. Finally, the Far West will require average to above-average snow fall in the mountains to replenish reservoirs and sustain river levels.

INTERNATIONAL SITUATION

(Based on data compiled at the NOAA/USDA Joint Agricultural Weather Facility through October 18, 1981)

USSR: For the third consecutive year, grain yield prospects were cut drastically by adverse weather conditions. Abundant moisture in the European USSR during the spring provided a good start to the 1981 growing season. However, hot dry weather during the period of peak moisture demand caused a rapid depletion of moisture supplies and imposed severe stress on crop development. A favorable precipitation pattern in September and early October allowed harvesting and winter grain sowing to progress rapidly. Soil moisture supplies have been adequate for early autumn growth and plants should have developed sufficiently to withstand winter's cold weather. However, sub soils remain drier than normal, and the possibility of moisture shortages limiting spring growth are possible. Significant precipitation is needed before soils freeze or before plant water usage becomes substantial in the spring. In the spring wheat area, autumn rains have improved soil moisture reserves, depleted during the growing season. Although soil moisture supplies are not as abundant as last year, early growth conditions for winter wheat are generally adequate and initial pre-season moisture supplies in the spring wheat area provide an optimistic note for spring sowing.

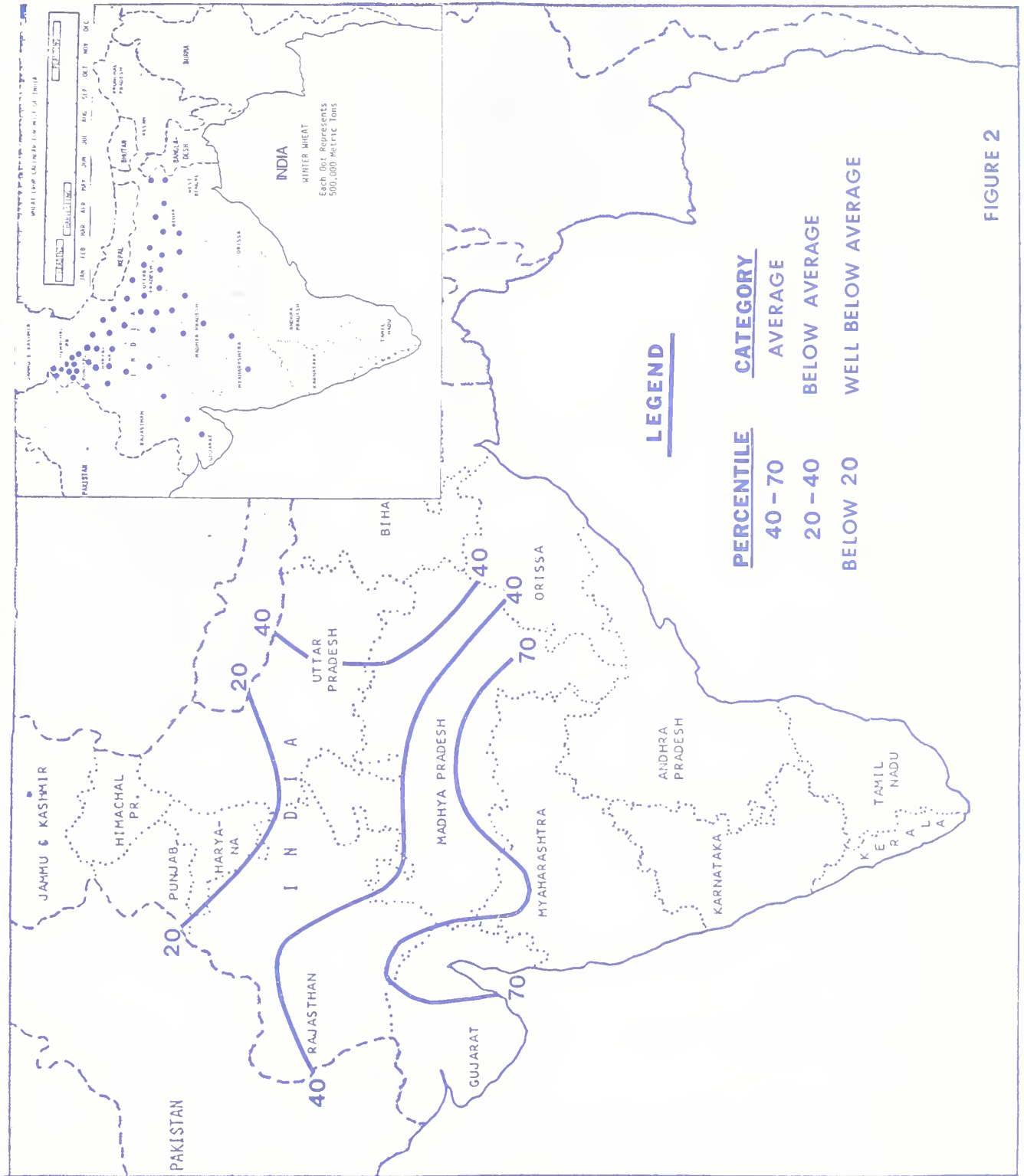
China: Heavy rains inundated portions of central China's Sichuan Province during the summer, and excessive rainfall during the past few weeks in double-crop rice areas soaked the maturing rice. Despite these excesses, however, 1981 was a relatively successful crop production year in China. Sowing of winter grains for the 1982 harvest has been aided by generally favorable moisture supplies, except in crop areas of Hebei and Shandong, where persistent dry weather has dimmed sowing prospects somewhat. Much needed rain fell in mid-October providing some topsoil moisture for sowing but additional rainfall is needed in this area to ensure adequate development before cold weather forces the crop into dormancy. Autumn moisture conditions in general are similar to those of last year in the winter grain area.

India: The intense monsoonal activity which prevailed during the first half of the wet season weakened considerably over northwest India and withdrew about a month early. Figure 2 depicts the percentile rankings of total rainfall for August and September in the major winter wheat area of India. Ten meteorological stations with 31 years of rainfall data were used for the analysis. The results show that a significant portion of India's winter wheat area, including Punjab, Haryana and western Uttar Pradesh was ranked below the 20th percentile indicating well below average rainfall for these two months. Most other wheat areas received below average rainfall and were ranked between the 20th and 40th percentile. This premature withdrawal lowered prospects of rice yields and reduced soil moisture supplies for winter grain sowing. Several days of substantial rains over much of the winter grain area at the end of September improved prospects, but supplemental irrigation will be required in many areas. This raises concern for reservoir supplies which suffered from the early end of the wet season. Crop conditions were more favorable in southern India.

Brazil: Frost and dry weather during the winter had a significant adverse impact on coffee as well as wheat in northern crop areas. Recent rains substantially improved moisture conditions for spring-sown crops in Parana and Sao Paulo. Conditions have been more favorable for wheat growth in southern crop areas where beneficial rains during the early spring have provided adequate soil moisture supplies. Thus, prospects for corn and soybeans are favorable at this time. However, due to the porous nature of the soils, especially in southern crop areas, timely rains are necessary to sustain favorable growth conditions.

Argentina: Weather conditions are repeating last year's pattern in the major corn, soybean and wheat-producing areas. Persistent below-average rainfall during August and September reduced soil moisture reserves to low levels at crucial periods of crop development. Winter wheat has entered the moisture-sensitive reproductive stage, and, corn and soybeans are in the planting and early growth stages. Thus, it is imperative that at least seasonal rains develop during October and November to meet these crop moisture needs. Some shower activity has provided temporary relief in northern crop areas but additional moisture will be needed, especially for corn, soybeans, and other newly-sown crops.

PERCENTILE RANKINGS OF RAINFALL IN INDIA'S WINTER WHEAT AREA (AUGUST AND SEPTEMBER COMBINED FOR 1981)



Merton C. Ingham, Atlantic Environmental Group, NOAA/NMFS

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I. Direct Impacts

Climatic variations directly influence marine fisheries in two ways -- by changing the environment in which the fisherman works and by modifying the distribution or abundance of the fish stocks. We have a good understanding of the effects of weather and climate on fishing operations, but a relatively poorer understanding of the effects of climate on fish distribution or abundance. There are many reasons for incomplete understanding of the climate-fish link, some of which are:

1. Complexity of multi-species interactions, with each other in a food web and with oceanographic conditions, which in turn are related in a complex fashion with meteorological conditions.
2. Difficulty of directly assessing the distribution and abundance of wild populations of most of the marine animals, often requiring use of estimates derived from fishery catch data.
3. Scarcity of time-series of oceanographic data, which requires the use of meteorological records as proxy data in bio-environmental studies.
4. Lack of knowledge of ecological impact pathways or mechanisms linking climatic change to variations in fish stocks.

An axiom among fisheries scientists states that the preponderance of environmental impact on the abundance of fish stocks occurs during the early life stages: egg, larval and juvenile. It is during these stages that the organisms are most susceptible to adverse environmental conditions, and it is during the larval stage that the availability of the right size and kind of food organisms in the right concentration is so critical for survival. Unusually cold temperatures may destroy or delay the development of these stages. Anomalous winds may cause unusual circulation patterns, transporting eggs or larvae away from nursery grounds to a hostile or even fatal environment. Delays in seasonal upwelling or runoff events may delay phytoplankton production and the production of acceptable forage for hatching larval stages, leading to unusually high mortality.

Many past attempts to determine the effects of climate variations on fish abundance have involved linear correlative analyses of time series of catch or year-class strength data for single species of fish with single or

linear combinations of environmental variables. All too frequently, such studies have yielded only apparently significant (statistically) relationships which were strictly fortuitous and had no conceptual ecological substantiation. Some of these studies took the form of "statistical net-casting", almost blindly trying to capture high correlation coefficients between annual fish catch data and various environmental variables. Often the data were lagged month-by-month until higher coefficients emerged.

More recently increasing attention has been paid to developing ecological, conceptual models as an integral part of climate-fisheries studies (Center for Ocean Management Studies, 1978), and more sophisticated non-linear relationships and multi-species holistic models are being attempted. Two such models, GEORGE and DYNUMES, are under development, respectively, at the Northeast Fisheries Center (Woods Hole, Massachusetts) and the Northwest Fisheries Center (Seattle, Washington) of the National Oceanic and Atmospheric Administration. However, there is still a role for simple empirical, statistical relationships or models, provided it is recognized that they are only hypotheses until relevant ecological mechanisms are determined. Ultimately, such relationships properly should become part of holistic, quantitative models.

II. Indirect Impacts

Indirect impacts of climate on marine fisheries usually begin as impacts on agricultural production of protein, then proceed through economic and political systems to influence fisheries activities. Crop failures due to anomalous weather conditions resulting in shortfalls in terrestrial protein production cause increased interest in the harvest of marine protein as a substitute. Such circumstances can be powerful stimulants to fisheries, strong enough in some instances to lead coastal nations to develop fleets capable of catching and processing fish thousands of miles from the home country. As an example of the strength of this sort of impact, consider the developing interest of some European nations in harvesting krill (small shrimp-like euphausiids) in Antarctic waters, over 8,000 nautical miles (15,000 kilometers) away. Another example can be found in the fishery for tunas, sharks and billfish in the North and South Atlantic pursued by vessels from Asian countries.

III. Outlooks for 1982

What can be said of the outlook for climatic impacts on marine fisheries in 1982?

Just as is true with agriculture, an outlook for fisheries variations resulting from weather conditions must be developed region by region, recognizing geographic differences in climate and marine populations. In addition, our understanding of bio-environmental interactions varies widely regionally and from fishery to fishery.

If the prediction made by Dr. Douglas A. Paine of Cornell University (1981) for continued drought and unusually cold winters for the eastern United States proves to be true, we can expect to see both direct and indirect impacts on marine fisheries.

A repetition of the severe cold of last December and January experienced in the New England and Middle Atlantic states will lead to significant constraints on fishing activity because of icing of vessels, bays and harbors. Last winter's cold resulted in a loss of production and income in coastal and estuarine fisheries, and to processing plants depending on regular landings.

In addition, as Dr. Herbert Austin and his co-workers at the Virginia Institute of Marine Science point out, another unusually cold winter in 1981-82 and continued drought conditions in the Middle Atlantic states will impact on the populations of several species in Chesapeake Bay and Pamlico Sound (North Carolina).

Unusually cold weather such as that of 1980-81 will significantly reduce the year-class abundance of Sciaenids, such as croaker, weakfish and spot (Norcross and Austin, 1981). These fish are present in Chesapeake Bay tributaries as juveniles during the early months each year, are stressed at water temperatures of about 4°C and die at temperatures of about 1.0-0.5°C (for croaker). A succession of several cold winters has a greater impact on these fisheries, because they are based on several year classes and usually can absorb a single year-class failure, but not several years in succession.

Dr. Austin also points out that the dry conditions of the past two years in the Chesapeake Bay watershed have led to an expansion of higher salinity nursery grounds for blue crab, resulting in increased abundance of this commercially important species. Continuation of the unusually low precipitation and runoff should result in further increases in its abundance, provided predation or disease do not intervene. On the other hand, the reduction of flow in tributary streams has meant that the influx of dissolved plant nutrients, normally carried into estuaries in the spring rainy season, has decreased or disappeared. The surge of nutrients into Pamlico Sound during the spring normally acts as a stimulus for blooms of phytoplankton upon which shrimp larvae depend for food. Therefore, low runoff in the spring months reduces phytoplankton availability and increases the mortality of shrimp larvae, which reduces the abundance of adults returning to the Sound in the fall, impacting on the fishery that occurs then.

The stocks of Atlantic menhaden depend, in part, upon wind-driven currents to transport eggs and larvae from offshore winter spawning sites into estuarine nursery grounds south of Cape Hatteras (Nelson et al., 1977). Wind field conditions in January-March 1980 provided for better-than-average shoreward transport for the eggs and larvae in this southern portion of the spawning range, a condition which is favorable for a strong year-class to enter the fishery as two-year old fish in 1982.

These climate-fisheries outlooks are just a few examples of those being developed in federal, state and university laboratories studying marine fisheries. However, most predictions of fishery abundance are developed from conceptual or statistical models which do not involve environmental inputs, because of the fragmentary state of our knowledge. As the state of knowledge of climate-fishery interactions advances, climate-based predictions will become increasingly available.

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National Weather Service, NOAA

1982 Agricultural Outlook Conference, Session #25
Washington, D. C.

For Release: Wednesday, November 4, 1981



NOAA's Climate Analysis Center (CAC) is one of the major elements of the National Climate Program. CAC was established in 1979 with resources (personnel and funds) from three major components of NOAA, the National Weather Service, the Environmental Data and Information Service, and the National Earth Satellite Service. Congress provided additional funding for CAC in FY 1978-80. CAC is an organization that combines research and development with the provision of products and services on an operational basis. CAC has roles in three of the six principal thrusts of the National Climate Program. It has a lead role in Climate Prediction. It is also involved in Generation and Dissemination of Climate Information, and Solar and Earth Radiation Budget.

CAC concentrates its attention on short-term climate variations from a few weeks to a few years. One of its principal concerns is to provide real-time information on the weather and climate in any part of the world to users concerned with climatic impacts in such climate-sensitive fields as agriculture, energy, and water resources. The organization of CAC is shown in Fig. 1. The Analysis and Information Branch is largely involved in providing real-time information to the user community. Its Agricultural Weather Section provides much of the direct contact with the USDA as part of the NOAA/USDA Joint Agricultural Weather Facility (JAWF). JAWF produces the venerable Weekly Weather and Crop Bulletin and provides expert advice to the World Agricultural Outlook Board and other USDA groups.

My presentation today is concerned with the work in climate diagnosis and prediction carried out mainly by the other two branches of CAC. This work is outlined in Fig. 2 where the functions of CAC are listed. Note that most of these functions involve diagnosis and/or prediction.

Diagnostics Branch Activities

● Current awareness

A watch is maintained on the major elements involved in short-term climate variations. These are:

- o Atmospheric wind, pressure, temperature, and moisture from near the surface into the stratosphere.
- o Sea surface temperature.
- o Snow and ice cover.
- o Precipitation and the accompanying heating of the atmosphere through condensation.

- o Components of the earth radiation budget (heating absorbed from the sun and cooling emitted from the earth-atmosphere system).
- o Cloudiness
- o Transports of heat, moisture, and momentum within the atmosphere and ocean.

Several of these elements cannot be observed in many parts of the globe, or at best can be estimated only crudely. Weather satellite data are helping to provide vital information on many of them. Although desired accuracies and space and time coverage may still be insufficient in many cases, it is now possible at least to construct indices that represent the principal trends and variations.

Some examples of such indices for snow cover and sea surface temperature anomaly are shown in Figs. 3 and 4, respectively.

- Analysis of recent climate fluctuations

Recent major climatic events are diagnosed carefully to determine the dimensions and probable causes of the events and their influences on ensuing changes in climate. Examples of recent events of major importance in the United States and vicinity are the heat wave and drought of the summer of 1980 and the very dry winter of 1980-81 (note the minimum amount of snow cover in North America in 1981 in Fig. 3). The heat wave of summer 1980 was associated with a very large scale, quasi-stationary flow pattern from the mid-Pacific eastward to Europe that resembled the circulation patterns during similar major heat waves in the 1950's. Another interesting preliminary finding of this investigation is that summer temperatures in the United States show some relationship to the strength of the subtropical high pressure belts around the globe in several preceding seasons (Fig. 5).

- Investigation of broad scale interactions of the global climate system

Variations in the climate in one part of the world are generally inter-related with events over distant portions of the globe and sometimes over periods of a year or more. Many of these interrelations are being discovered and documented in current studies, particularly as extensive collections of data can be examined more systematically and rapidly with advanced electronic computers, innovative analysis methods, and improved theory.

One such major climate interaction system involves the equatorial Pacific where very substantial variations in sea surface temperatures, winds near the surface and aloft, and cloudiness and precipitation occur at irregular intervals of 3 to 10 years. These fluctuations, which last a year or more, can have profound effects on extratropical circulations at great distances, particularly in the cold season of the year. This phenomenon, the "Southern Oscillation", is also associated with the occurrence of warm water along the coasts of Ecuador and Peru (the so-called "El Niño").

The contrast in tropical sea surface temperature anomaly patterns over the Pacific during the onset of such a Southern Oscillation-El Niño event is illustrated in Figs. 6 and 7. The shift from below to above normal sea surface

temperatures over vast regions of the tropical Pacific between July 1971 and July 1972 is especially striking. These changes were accompanied by major changes in winds, pressures, temperatures, and precipitation in many parts of the world in 1971-72. The differences in Northern Hemisphere mid-tropospheric circulation patterns associated with opposing stages of the Southern Oscillation are illustrated in Fig. 8. The chart on the left is a composite of the winter 700 mb height anomalies (equivalent to pressure anomalies near 10,000 ft) in years when the Southern Oscillation index is high (sea surface temperature below normal in the equatorial Pacific); the chart on the right is the composite for the reverse situation. Over much of the Pacific, North America, and the Atlantic, the anomaly patterns are also practically reversed. The pattern on the right shows extensive negative (cyclonic) anomalies in the Pacific and eastern United States and a positive (anticyclonic) anomaly over western North America. This pattern is associated with generally cold weather in the eastern half of the United States and warm weather in the western half. The pattern on the left is generally associated with warm weather in the East and cold weather in the West. Thus, the events over the tropical Pacific appear to be strongly connected to the climate anomalies over the United States and many other middle and high latitude regions of the Northern Hemisphere. It must be emphasized, however, that these particular interrelations explain only a relatively small proportion of the entire climate variations over the United States and the rest of the Northern Hemisphere.

Prediction Branch Activities

● Current prediction program

The Prediction Branch prepares the official NWS monthly and seasonal predictions. Monthly forecasts are issued twice monthly a few days prior to the 30 day period to which they apply. Seasonal (3 month) forecasts are now issued once each month a few days prior to the beginning of the ensuing three months. The latest seasonal temperature forecast, issued last week, for November 1981-January 1982 is shown in Fig. 9. On a two class basis (below or above normal), these predictions have a 60% chance of being correct, based on past verification, as compared with 50% chance climatologically. (Forecasts for December-February have been 65% correct on the average.) Monthly predictions have a similar 60% skill for temperature and 55% for precipitation. Seasonal precipitation outlooks have a very low level of skill and are only issued in winter and summer, when their probabilities approach 55%.

● Goals for prediction research and development

Much of the diagnostic type of research referred to above, as well as research within and sponsored by the Prediction Branch, are directed toward finding improved statistical methods for preparing long range forecasts. It is also likely that diagnostic research will lead to the use of simplified physical models to aid in making the predictions in the next few years. Large-scale numerical general circulation models appear to be developing some skill in the medium range out to about two weeks. These advances should help in the improvement of the monthly forecasts in the next few years, but it is doubtful that such models can aid the seasonal forecasts in the next decade or longer.

The goals for climate prediction in the next 5 to 10 years are listed in Fig. 10. The near-term goal of an improved probability format of the monthly

and seasonal forecasts is expected to be reached in about a year. The general plan is to draw additional contour lines on the forecast charts depicting a continuously varying estimate of the probabilities of warm or cold, wet or dry. Verification scores and the forecasters' judgment will be combined in the placing of these contours.

Some of the longer term improvements may be achieved in a few years. Top priority is being given to longer lead times for seasonal forecasts. We would like to be able to issue seasonal temperature forecasts as early as 3 to 9 months before the start of a season (e.g., a winter forecast issued at the beginning of September or as early as the beginning of March). We know that many of the users of climate predictions would find such longer lead time forecasts to be of considerable value.

Generally, of course, we wish to improve the accuracy of our current monthly and seasonal forecasts. We hope to do this through improved statistical methods derived from the new findings of diagnostic and prediction research and improved statistical techniques, the application of simplified climate models, and the improved skill in medium range forecasting being achieved by numerical general circulation models.

Expanded areal coverage of forecasts to include much of the globe should be of special interest to agriculture and water resource interests. Additional forecast elements such as cloudiness, solar radiation, and surface wind also need attention, but as yet we are not sure of the user demand for such predictions. As user demand is defined, it is likely that some effort will go into development of forecasts of these additional elements. We are optimistic that some useful skill could be achieved in predicting a few of them.

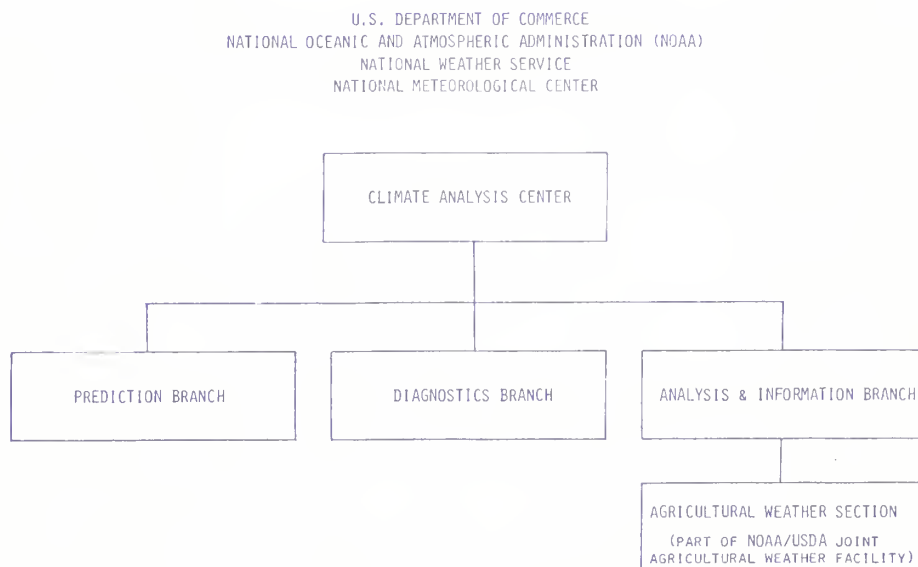


Figure 1

FUNCTIONS OF CLIMATE ANALYSIS CENTER

- O MAKES OFFICIAL U.S. PREDICTIONS FOR MONTHS AND SEASONS.
- O MAINTAINS CURRENT AWARENESS OF GLOBAL AND REGIONAL CLIMATE FLUCTUATIONS.
- O PROVIDES ANALYSES AND INFORMATION ON CURRENT AND PREDICTED WEATHER AND CLIMATE TO USER GROUPS (E.G. AGRICULTURE, ENERGY, WATER RESOURCES).
- O CONDUCTS AND SUPPORTS:
 - NEW CLIMATE DIAGNOSTIC STUDIES.
 - DEVELOPMENT OF IMPROVED STATISTICAL PREDICTION TECHNIQUES.
 - COMPARATIVE TESTING OF PREDICTION TECHNIQUES.
- O MAINTAINS COGNIZANCE OF INTERNATIONAL AND NATIONAL PREDICTION RESEARCH AND DEVELOPMENT.
- O IDENTIFIES PROMISING NEW PREDICTION APPROACHES FOR TESTING AND POSSIBLE OPERATIONAL APPLICATION.
- O IDENTIFIES AND DEFINES USER NEEDS TO PROVIDE BETTER INFORMATION ON CURRENT AND PREDICTED CLIMATE FLUCTUATIONS.

Figure 2

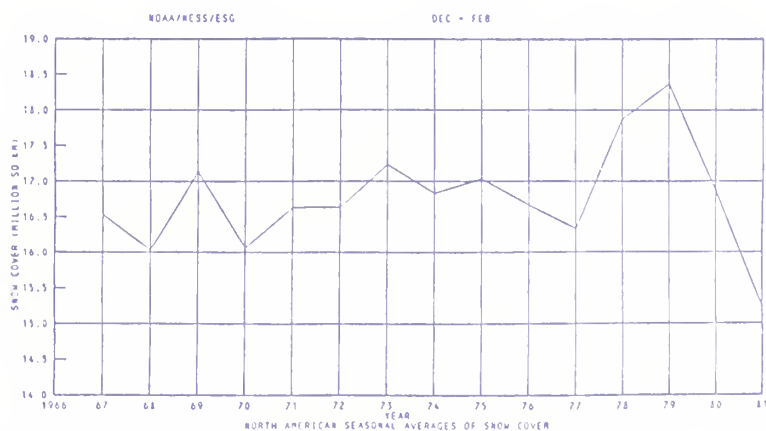


Figure 3

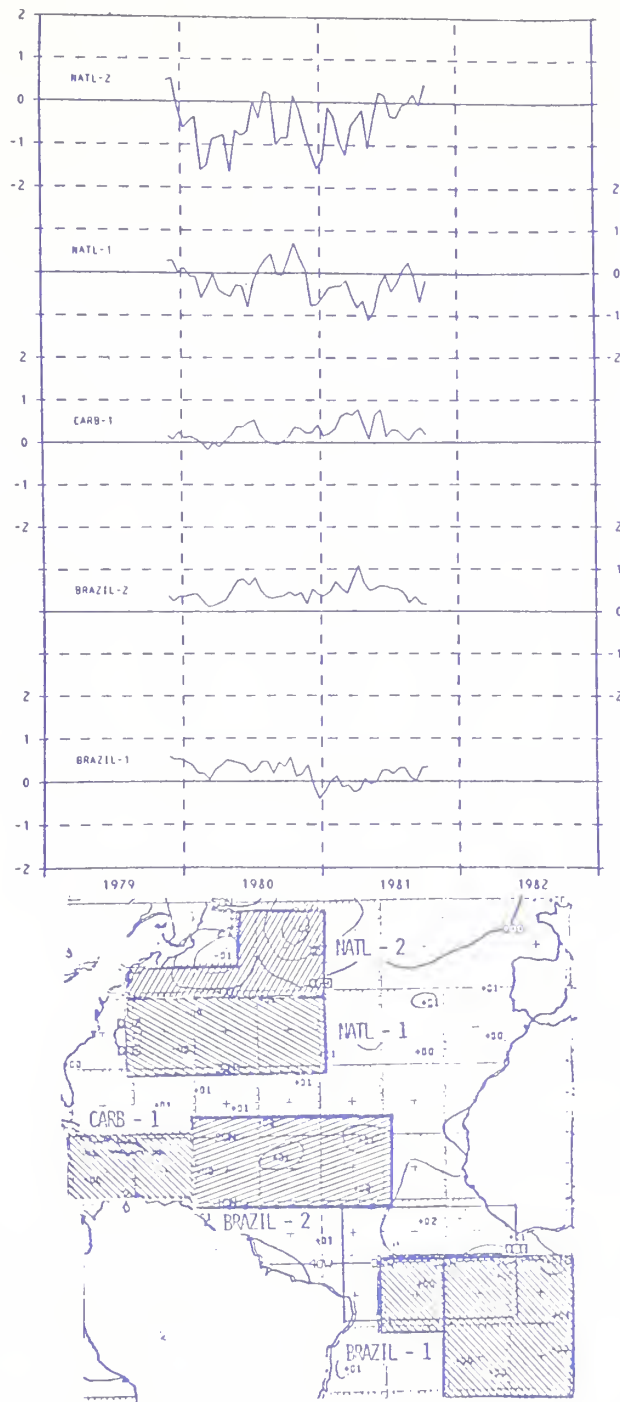


Figure 4. Plots of 15-day mean sea surface temperature anomalies ($^{\circ}\text{C}$) for five areas in the Atlantic region.

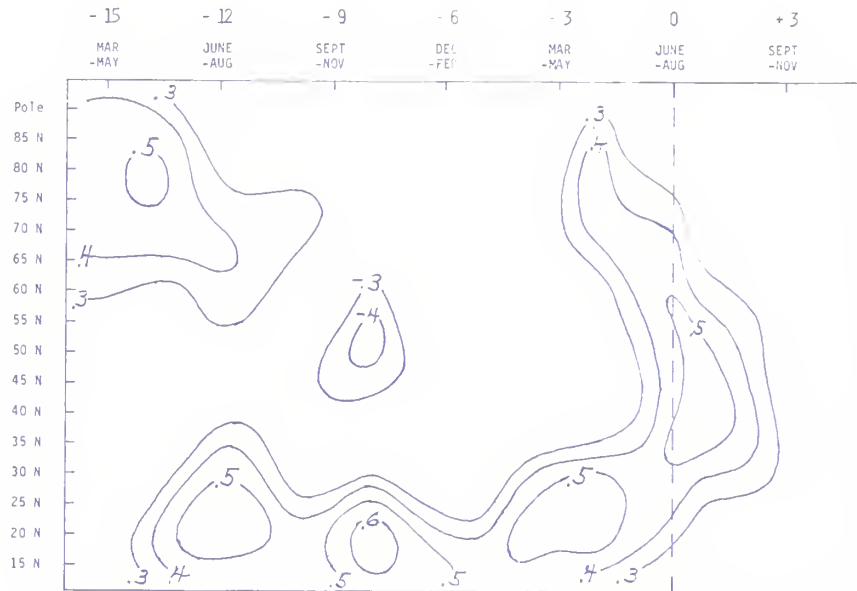


Figure 5. Isopleths of lag correlation coefficients (annual cycles removed) between seasonal mean 700-mb height anomalies for latitude belts around the globe and summer U.S. surface temperature anomaly. Period of record is 1948-1980. Negative lags signify height anomaly leading U.S. temperature anomaly

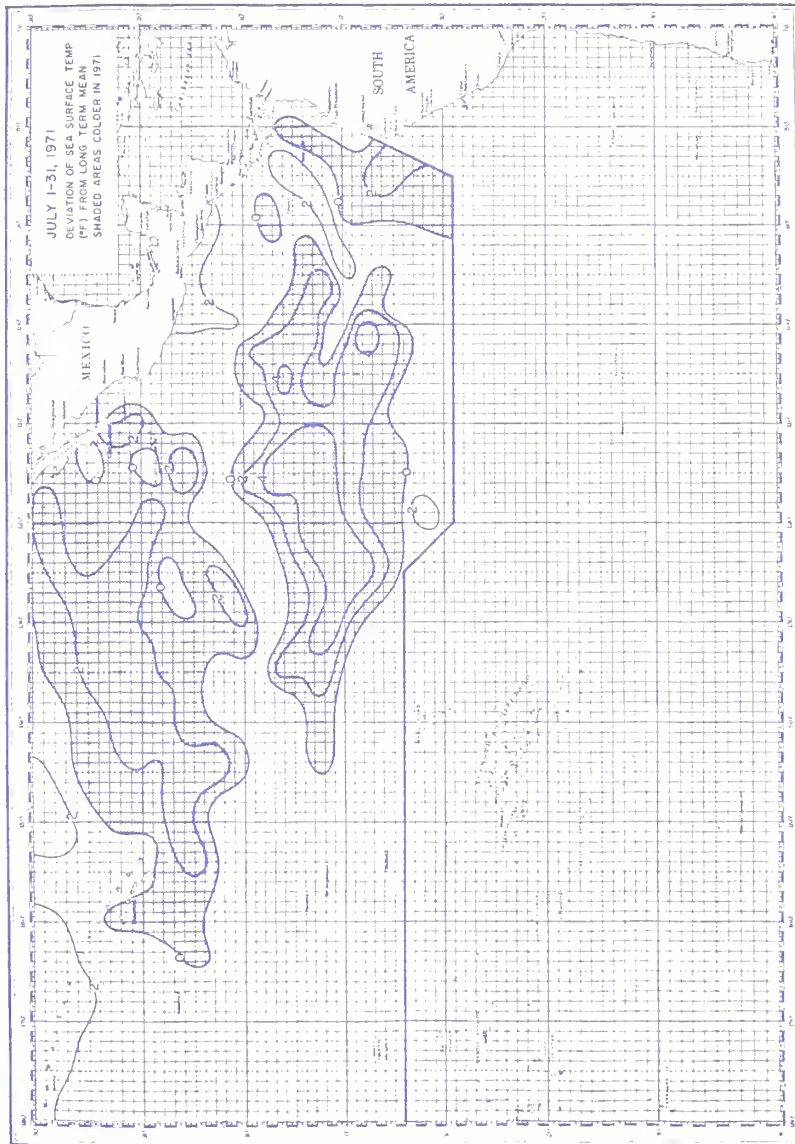


Figure 6

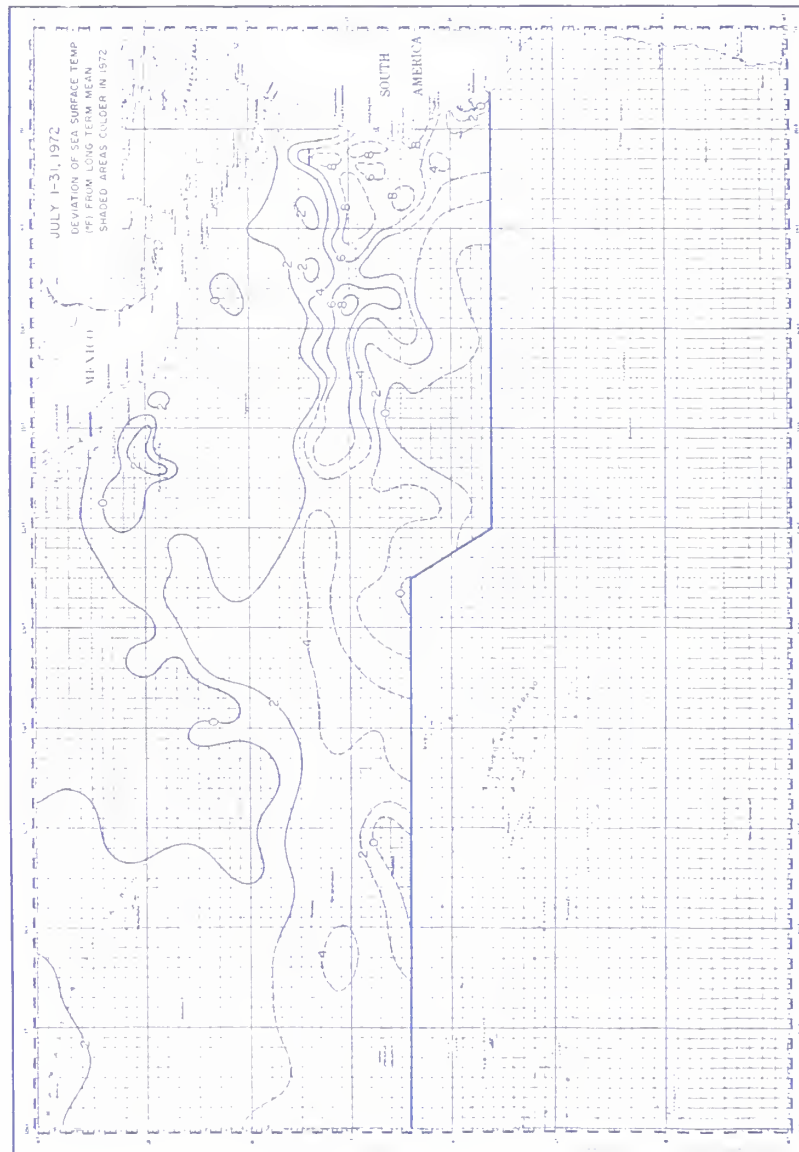
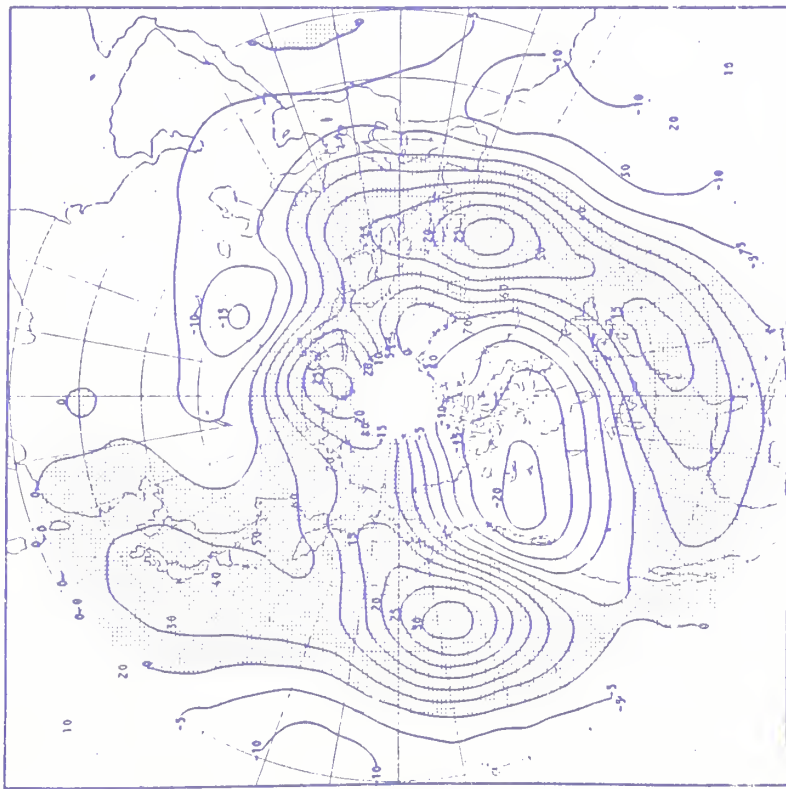
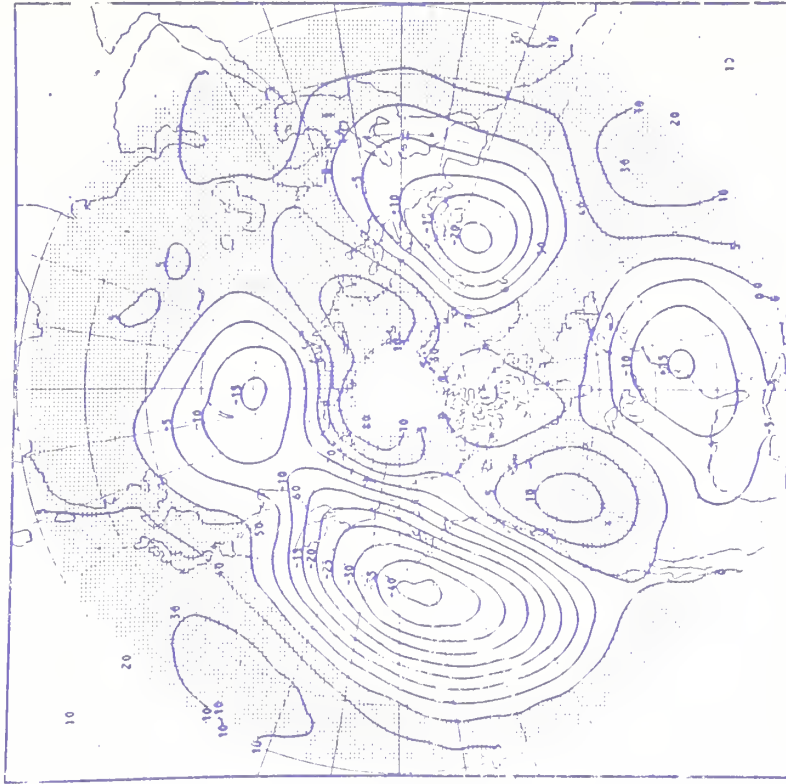


Figure 7



DJF COMPOSITE (1953, 57, 65, 69, 72, AND 76)



DJF COMPOSITE (1954, 58, 66, 70, 73, AND 77)

Figure 8. Composite winter 700-mb height anomaly patterns for years when the Southern Oscillation index is high and equatorial Pacific sea surface temperatures are below normal (left) and for years of low Southern Oscillation index and above normal equatorial Pacific sea surface temperatures (right). Positive values are shaded.

OUTLOOK FOR 90 DAY AVERAGE TEMPERATURES
NOVEMBER 1981 THROUGH JANUARY 1982



The two categories Above and Below are to be compared to the long-term average or "normal" temperatures of the years 1941-70. Each category has a natural climatic frequency or probability of 50%. Each carries a 60% probability of occurring where forecast (shaded area) based on the verification scores of twenty-two years of experimental seasonal forecasting.

NOAA, National Weather Service
Climate Analysis Center

October 29, 1981

Figure 9

MAJOR CLIMATE ANALYSIS CENTER GOALS
FOR CLIMATE PREDICTION

NEAR TERM

- o INSTITUTE A NEW PROBABILITY FORMAT FOR MONTHLY AND SEASONAL FORECASTS.

LONGER TERM

- o INCREASE THE LEAD TIME OF SEASONAL FORECASTS UP TO SEVERAL MONTHS BEFORE SEASON BEGINS
- o IMPROVE THE ACCURACY OF MONTHLY AND SEASONAL FORECASTS THROUGH
 - IMPROVED STATISTICAL METHODS
 - APPLICATION OF SIMPLIFIED CLIMATE MODELS
 - APPLICATION OF IMPROVED SKILL OF 10-15 DAY FORECASTS TO MONTHLY PREDICTIONS
- o EXPAND GEOGRAPHICAL EXTENT OF FORECASTS TO COVER ALL OF THE NORTHERN HEMISPHERE, INCLUDING THE TROPICS, AND LATER THE SOUTHERN HEMISPHERE AS WELL.
- o PREDICT ADDITIONAL ELEMENTS SUCH AS CLOUDINESS, SOLAR RADIATION, AND SURFACE WIND

Figure 10

Wayne A. Fletcher, President
Federal Crop Insurance Corporation

1982 Agricultural Outlook Conference, Session #26
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Introduction

There is no doubt that crop protection will be a major agricultural program for the 1980's. One in 14 planted acres in this country never reaches harvest. This represents an enormous loss in investment for farmers.

We at the Federal Crop Insurance Corporation can do nothing about the whims of Mother Nature. But we can help the farmer protect himself financially with crop insurance.

With today's economy being what it is, the farmer can expect to forfeit as much as five years' of profits with each crop loss. Those are high stakes to gamble.

But while the business of farming is growing riskier, Federal Crop Insurance is growing more capable of meeting the challenge.

History

There are pieces of legislation that are passed by Congress which change history. The Federal Crop Insurance Act of 1980 is, for farmers, such an Act.

Crop insurance has a long history. The original Crop Insurance Act was passed in 1938. This action followed a long period of frequent and severe droughts in the 1930's. There was no private insurance available on the crops except against hail damage, and, in some areas, fire damage. The first act provided only for the insurance of wheat in all counties in the United States where the crop was grown.

Over the years, different programs were tried to give farmers relief from crop disasters. By 1980, just about everybody acknowledged that Washington's accumulated mishmash of Federal programs, which totaled 26, had gotten out of hand. Taxpayers complained that they cost too much, and farmers complained they didn't help enough.

Today, farmers want and need an insurance program designed to cover major costs of production--one that will provide dependable coverage year after year.

All-Risk Crop Insurance offered by the Federal Crop Insurance Corporation is this kind of insurance. In fact, one of the major problems of the Corporation is the difficulty in expanding the insurance protection rapidly enough to include all counties and crops. The popularity of this newly expanded program lies partly in the fact that many more farmers can now participate and more crops can be insured.

Expansion of Program

The county and crop expansion goals for FCIC in the next several years are awesome. Here are the goals:

1981 - Insurance available in 1,928 counties on 28 crops.

1982 - Insurance available in nearly 3,000 counties in 49 states.
Expansion into 100 percent of the disaster crop acreage. Disaster crops are corn, wheat, cotton, grain sorghum, rice, and barley.

1983 - Insurance available in nearly 3,000 counties, covering all of the disaster crop acreage and 100 percent of the soybean acreage.
Expansion of the 21 other insurable crops into a maximum number of counties.

Also addition of pilot insurance programs on additional commodities.

1984 -Insurance available in 3,000 counties, covering all disaster crops plus soybeans, and most of the acreage of the 21 other crops insurable. Also, further expansion of a number of pilot programs on additional commodities.

The crops now insured in selected counties by FCIC are: Almonds, apples, barley, citrus, corn, cotton, dry beans, flax, forage, forage seed, grain sorghum, grapes, oats, peaches, peanuts, peas, potatoes, raisins, rice, rye, soybeans, sugar beets, sugarcane, sunflowers, sweet corn, tobacco, tomatoes, and wheat.

Virtually 100 percent of these crops will be insurable by 1985.

Expansion Rate

The total premium income for 1980 was \$157 million; it will be in excess of \$350 million for 1981, and is projected to be \$600 to \$700 million in 1982.

The amount of insurance protection will increase from \$6.9 billion in 1981 to \$8 to \$13 billion in 1982.

Acres insured will increase from approximately 50 million in 1981 to 85 to 100 million acres in 1982, reaching a participation rate of 35 percent of the eligible insurable acreage. It is expected that participation will increase again for 1983 to about 50 percent.

Role of Private Insurance Industry

FCIC will double business volume for two years in a row. To achieve this, the resources of the private insurance industry along with the All-Risk insurance experience of FCIC must be utilized to the fullest. The Federal Crop Insurance Act of 1980 mandates that the private insurance industry be utilized as much as possible. Many of the private insurance companies are experienced in servicing the rural insurance market. They have a skilled and disciplined agency force in the field. They have the proper processing capability in place and most have ongoing training and quality control programs, and many have expertise in adjusting losses. Some of these companies have the financial capability of sharing a limited amount of losses, should they occur. For assuming that risk, these companies will be afforded the opportunity to share a limited amount of any profits.

Delivery System

FCIC has been rapidly developing a sales delivery system to contact the maximum number of farmers who are interested in crop insurance protection. There are four major sales delivery systems which will be serving farmers during the 1982 crop year. These include:

1. Reinsurance Agreements:

Under reinsurance, established insurance companies provide the insurance marketing, distribution, servicing, training, quality control, and loss adjustment functions, and share with FCIC to a limited extent in both profits and losses.

2. Agency Sales and Service Agreements (Master Marketing Agreement):

Private insurance companies and organizations are offered the opportunity to contract with FCIC to provide insurance sales and service. They are compensated on a commission basis. Functions for which these companies are responsible include sales distribution, servicing, training and quality control.

3. Individual Agent Sales and Service Agreements:

Private insurance agents and brokers may sell Federal All-Risk Crop Insurance with the insured having the right to renew insurance for successive terms through agents. These sales and renewals are compensated on a commission basis. For 1982, we estimate that there will be about 2,500 agents selling under individual agreements.

4. ASCS county offices will serve as sales and service points in areas where commercial sales systems are limited.

Program Support

The Corporation's confidence in meeting it's goals has been heightened by the support received from ASCS and other Federal agencies and the private insurance industry. In addition, there is a strong effort within the Department of Agriculture to make the benefits of the All-Risk Crop Insurance known to the public. Secretary Block and many members of his team are speaking out on this issue. The Secretary's office is stressing the need of the farmers, the Government, and the members of the private insurance industry to cooperate to the fullest extent.

Program Improvements

In view of the importance of the crop insurance program to farm producers and the national economy, the Federal Crop Insurance Corporation is implementing a number of program improvements. The previous organization and delivery systems may have been adequate to handle a 12 percent participation rate. However, higher participation goals require a more comprehensive and efficient organization. The Corporation's expansion and implementation plans encompass the following program improvements:

1. Individual Yield Coverage Program -Under an innovative program currently being developed, farmers who believe that insurance coverage provided to them is based upon unrealistically low average yields will be provided the opportunity to substantiate higher average yields.

FCIC is developing a new individualized yield coverage program for the six disaster crops of corn, wheat, cotton, grain sorghum, rice, and barley, plus soybeans, beginning with the spring 1982 crops. Under this program all farmers will have an opportunity to substantiate higher average yields by verifying those yields through their local Agricultural Stabilization and Conservation Service (ASCS) office.

2. Evaluation of Rating Structure -The legislation requires FCIC to charge premium rates that are adequate to cover expected losses and provide for a reasonable reserve against unforeseen losses. Achieving such a rating structure is a formidable task. With this in mind, FCIC has initiated an all-encompassing study of its system of establishing rates.
3. Strengthen Quality Assurance -A stronger method of quality assurance is being implemented to assure that all farmers are buying and receiving the same program benefits. The variety of delivery systems make this essential for long-range program satisfaction and participation.
4. Streamline Program Administration -A simplified method of processing documents is being studied so that FCIC can provide faster and better service to farmers at significant cost savings. This will include a streamlined application process with a multi-crop application form available in the spring of 1982.
5. Management Information System -Implementation of a complete management information system responsive to Departmental, Congressional, private industry and farmer requests is essential to the success of the insurance plan. An initial stage of this system is expected to be in place for the 1982 crop year.
6. Research Projects -As demand warrants and data permits, FCIC will initiate research projects leading to the development of insurance programs on farm commodities other than the 28 now covered by insurance. Such projects already are under way for catfish farming, forest trees, and citrus trees. Cooperation from other USDA agencies in some of these projects will be required.
7. Work Measurement System -A new work measurement system is being designed which will utilize the resources of FCIC more efficiently and serve as a basis for cost analysis for contracting and other purposes.
8. Expanded Education and Promotion Efforts -For a successful crop insurance program, it is essential that a high level of producer understanding and participation be attained. Promotion efforts are under way to inform farmers about crop insurance in the winter wheat and barley areas where it is currently being sold.

A combination of radio, television, and print are being used to provide maximum coverage. There have been announcements, statements, press releases, and speeches by the Secretary of Agriculture and others.

In addition, a letter providing information on crop insurance was sent to every disaster crop producer through the Agricultural Stabilization and Conservation Service (ASCS) county office.

9. Prevented Planting Pilot Program

A pilot program for prevented planting begins December 1, 1981. The pilot program is designed to cover prevented planting due to excess moisture for the 1982 crop year. If the pilot program is successful, potential exists to offer prevented planting insurance nationwide.

Five states and ten counties were selected for the experiment based upon the recommendation from ASCS as well as a review of prevented planting payments made under the Farm Act of 1977.

Coverage Levels

Crop insurance is not, of course, a substitute for a good crop season or a bumper harvest, but it does assure farmers who carry full coverage of at least getting back the substantial investment in their insured crops. Anytime an insured crop falls short of the production guaranteed by the policy, an indemnity payment can make up the difference in cash.

Policy holders can elect to insure only part of their total production investments. For example, they can purchase enough insurance to cover just the outstanding loans on the crops. The built-in flexibility of All-Risk policies offers choices of guaranteed yield and amounts of indemnity to be paid for each bushel or pound of loss. The cost of insurance (a fully tax-deductible business expense) depends on the level of protection selected.

Farmers can insure their crops for 50, 65, or 75 percent of the average county yield. If their harvest is less than the insured level because of natural conditions, the insurance pays the difference.

The farmers select their own rate of payment by selecting one of three levels of payment when they buy the insurance.

Growers get special low-cost premium rates because the Government pays 30 percent of the premium cost up to 65 percent coverage level.

Anyone who is interested in an insurable crop -- landlords, tenants, absentee landlords, and owner operators, may purchase the insurance.

Benefits to Farmers

All-Risk Crop Insurance is designed to stand between crop disaster and financial disaster. It provides the economic protection families need at a cost they can afford.

It costs more money today to grow a crop, and it costs more to pay for money when a farmer borrows. Yet a whole host of catastrophes can wipe out five years of a farmers profits within a matter of minutes. Catastrophes like drought, flood, freezing, hail, insects, disease. Many economists believe that "capital conservation" is the single most important management skill in farming today.

Crop insurance protects the money it takes to make money. Bankers like to see crop insurance because it can be used as collateral. In many cases, insurance might be the only thing that allows a farmer to continue to farm.

Crop insurance is affordable. The Federal Government now pays up to 30 percent of the premium cost for farmers who carry insurance. Farmers who have few or no losses are eligible for substantially lower premium rates.

Crop insurance is flexible. Individual farming practices are now taken into account when designing a policy for a farmer. In addition, coverage selections and price selections offer a farmer a wide variety of possibilities for tailoring a policy exactly to his needs.

In tens of thousands of rural towns and communities across the nation, farming is the most important single industry--the life blood of survival for every local business; from machinery dealer, to the country store, from the furniture retailer to the farm supplier. By protecting the individual farmers of these local communities, crop insurance protects the way of life of the entire community.

And indeed, farming is a way of life, not just a means for making a living. Even in good years, farmers are plagued with the ever-present fear that next year may be the year that ends the lifestyle that farmer knows and loves. Federal Crop Insurance provides personal as well as business security in this respect.

Conclusion

There is no doubt that Federal Crop Insurance is the farm protection program of the future. Disaster payments along with many other complicated farmer protection programs will give way to the equalized opportunities for protection offered by Federal Crop Insurance.

Farmers comprise only three percent of the population in this country, yet they provide the food supply for more than 220 million people. Over one-fifth of the total U. S. Labor Force is directly or indirectly dependent on agriculture for employment. With these kinds of statistics more Americans than just farmers have a stake in maintaining the financial security of American agriculture. That is why crop insurance is so important to the individual in particular and to American society at large.

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for Natural Resources and Environment

OUTLOOK '82

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A large part of the true wealth of the United States is its abundant natural resources--tillable land, clean water, and productive forests. These resources, combined with the most favorable climate in the world for growing crops and timber, have enabled us to produce all of the food that we need. . .and most of the clothing and shelter.

In most years, we have supplied ourselves in abundance, exported to many other nations, and still had enough left over to create sometimes worrisome surpluses.

We have doubled agricultural production in the past 30 years, and we now provide about 17 percent of the value of the world's food and fiber exports.

These exports help offset U.S. imports of oil and automobiles, cameras and TV sets, and hundreds of other items. They are absolutely essential to helping correct our continuing deficit balance in world trade payments.

For example, during FY 1981, the United States sent \$43.8 billion worth of farm products to other countries--8 percent above FY 1980's \$40.5 billion level. With agricultural imports to this country set at around \$17 billion for FY '81, American agricultural exports will enable us to achieve an all-time high of about \$27 billion on the plus side of our foreign agricultural trade. Without the help of agriculture, the Nation's FY '81 trade deficit of around \$30 billion would have been much worse.

Because the Nation's soil, water, and forest resources play such an important role in maintaining our country's high standard of living and its economic well-being, the Federal Government is actively involved in protecting these resources and assuring their continued productivity.

Two of the major agencies within the U.S. Department of Agriculture that are directly concerned with these resources are the Soil Conservation Service and the Forest Service. Today I would like to describe the programs of these two agencies.

SOIL CONSERVATION SERVICE

The Soil Conservation Service works to protect and develop the soil, water, and related resources of the Nation's nonfederal land. . .to help land users manage their resources more effectively and continue to produce adequate supplies of food and fiber from the land. . .and to protect the quality of the environment.

SCS programs and activities fall into three major categories: soil and water conservation, natural resource surveys, and upstream flood protection.

Basically, SCS is a technical-assistance agency, with a cadre of professionals who work on request with private land users and with State and local units of government.

SCS also administers or participates in several programs that include cost-sharing: the Great Plains Conservation Program, the Small Watershed Program, and the Rural Abandoned Mine Program, which it administers; and the Agricultural Conservation Program (ACP), the Water Bank Program, and an experimental rural clean water program, which are administered by the Agricultural Stabilization and Conservation Service.

SCS provides help to land users through almost 3,000 soil and water conservation districts. These districts, which are local units of State government, set priorities and provide direction for the conservation work performed in their areas. Conservation districts include almost all the privately owned land in the United States.

To help the Department do a better job of protecting the Nation's soil, water, and related resources through SCS and other agencies, Congress passed the Soil and Water Resources Conservation Act of 1977, or RCA.

RCA directed the Secretary of Agriculture to appraise on a continuing basis the soil, water, and related resources of the Nation's nonfederal land. . .and to develop a program for furthering the conservation, protection, and enhancement of these resources.

The 1980 RCA Appraisal confirmed what many scientists and agricultural experts had been saying for years--that the Nation has some serious resource problems that threaten the land's long-term ability to produce. These problems and the consequences for failing to deal with them include:

A potential for tremendous pressure on America's soil and water resources now and in the future, caused by substantial increases in demand for agricultural products--both domestic and foreign.

Soil erosion on 141 million acres of cropland--one-third of our total--at rates that reduce soil productivity. Over the next 50 years, this productivity loss, if not halted, could equal the output from 25 to 62 million acres of cropland. Stated another way, this means that we would give up forever the production of 50 to 75 million metric tons of grain every year. That's half the grain we exported last year.

Erosion and deterioration of forage quality on 60 percent of the Nation's nonfederal rangeland that is sharply reducing its productive capacity. This land is producing forage at less than half its potential. This means that potentially 600 to 800 million pounds of red meat aren't being produced every year.

. Increasing upstream flood damages to cropland, pasture, and urban lands, which could reach \$2.3 billion annually by the year 2000. These damages affect rural people and communities that can least afford the damage.

. Considerable ground water being withdrawn for irrigation--in some areas, much faster than recharge can take place naturally. This so-called "ground water mining" is depleting the Nation's water supply at a rate of 21 billion gallons per day. In some areas, ground-water levels are falling 7 to 10 feet per year.

The Appraisal indicated that if we are to meet the production challenges of the future, we must identify the most pressing and urgent resource problems. . . and take effective action to address them.

Secretary of Agriculture John Block kept this in mind in developing the preferred RCA program, which he announced last week.

The preferred program sets clear national priorities for addressing soil and water problems. These priorities are to:

. Reduce excessive soil erosion that would impair agricultural productivity;

. Reduce flood damages in small, upstream watersheds;

. Conserve water, enhance water quality and supply, and conserve community-related natural resources; and

. Improve fish and wildlife habitat and increase the use of organic waste.

To accomplish these goals, we propose:

. An expanded role for local and State governments in developing and implementing soil and water conservation programs;

. Targeting of a greater share of USDA conservation program funds and people to critical problem areas;

. Federal matching block grants to States, funding for which would be obtained from existing Federal conservation programs.

. More emphasis on conservation tillage and other cost-effective measures for reducing soil erosion to accomplish more for each private and public dollar spent;

. Pilot projects to test new solutions to conservation problems;

. Requirements that farmers receiving Farmers Home Administration Loans have conservation plans for their farms;

. Evaluation of tax incentives to induce greater use of conservation systems; and

. More effective research, education, and information services.

Details of the preferred program, as well as two alternative programs offered for consideration, are available for public review and comment through January 15, 1982. I urge each of you to review these recommendations and make your views known.

After the Department receives and considers your comments, as well as all the others, the Administration will formally prepare and the President will submit a final recommended program to the Congress.

The ultimate goal of RCA is to assure that the Nation has enough soil and water resources to meet our future needs for food and fiber at a reasonable cost. I believe that the Secretary's preferred program is a vital first step toward meeting that goal.

FOREST SERVICE

Responsibility for Federal programs aimed at improving the productivity of the Nation's forest resources belongs to the Forest Service. Unlike the Soil Conservation Service, which deals exclusively with nonfederal land, Forest Service activities involve both public lands and nonfederal forest and rangelands.

The mission of the Forest Service is to manage the National Forest System. . .cooperate with State foresters in assisting private forest landowners. . .conduct forestry research. . .and ensure the productivity of the land and the quality of the environment for future generations. Its programs within the Department center on these activities.

One thing that sets the Forest Service apart from many other USDA agencies is that the Federal Government realizes revenue from some of its activities--mainly the sale of timber from National Forest System lands. In FY 1980, National Forest timber sale receipts amounted to about \$934 million. The Government's timber management policies have major impacts on regional timber-based economies.

In addition, there are oil, coal, and other energy materials on National Forest System lands that contribute to the Nation's energy supply. In FY 1980, the Federal Government received around \$87 million from mineral, oil, and gas leases and royalties on these lands.

National Forests also are extremely important for recreation, wildlife, grazing, and water. In FY 1981, these lands provided:

Recreational use amounting to 233 million visitor days--more than two and one-half times the amount traditionally received by the National Parks;

Timber harvests of about 11 billion board feet a year, which is 23 percent of the Nation's annual softwood lumber and plywood needs--the prime material used in housing;

Grazing at least part of the year for almost 3-1/2 million sheep and cattle;

Habitat for thousands of species of wildlife, including many endangered and threatened species; and

Three-fourths of the water used in the West.

To help the Department better plan the future of our country's renewable resources, the Congress passed the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), which was amended and expanded by the National Forest Management Act of 1976.

RPA and RCA are companion pieces of legislation, designed to complement each other.

RPA, which is administered by the Forest Service, directed the Secretary of Agriculture to prepare two documents at specified intervals: the Assessment in 1974, 1979, and every 10 years thereafter; and the Recommended Program in 1975, 1980, and every 5 years thereafter. The first Assessment and Program were published in 1975; the second in 1980.

The 1979 Assessment indicated that by the year 2030, demands for nearly all forest and rangeland resources will increase more rapidly than supplies if we continue current management trends. Specifically. . .

- . Demand for all wood products is expected to more than double.
- . Demand for wildlife and wilderness also will increase substantially.
- . Demand for livestock forage will rise 40 percent.

. Demand for outdoor recreation will increase anywhere from 60 percent to more than 100 percent, depending on the activity involved.

. And demand for oil, gas, and minerals will be unprecedented. It has been estimated that 60 percent of the Nation's total potential domestic energy resources are located on Federal lands. Industry already is scrambling to develop formerly uneconomic sites.

All these demands must be met from a stable, or even diminishing, land base.

The Assessment did predict, however, that we can meet these increased demands if we expand productivity through better resource management. The 1980 Recommended Program was designed to help accomplish that goal. It charted a 50-year course for Forest Service programs.

The Recommended Program offered a wide range of options, rather than a single course of action. The "high bound" was the Forest Service's recommendation, and the "low bound" was designed to maintain the President's future option on budgeting.

Former President Carter's Statement of Policy explained that the range in the Program was needed to provide flexibility, so that adjustments could be made to reflect better data and analysis, uncertainty about future economic conditions, and differing views on resource management priorities.

Congress, among others, was not happy with the high bound-low bound approach. They wanted a firm recommended program. They felt this approach was counter to the goals of RPA--that is, to evaluate the long-range opportunities for meeting resource demands on our forests and rangelands, independent of short-term budgeting constraints.

Consequently, Congress exercised its legislative authority and amended the Statement of Policy. Among other things, the Amendment accepted the high bound goals for most resources, but recognized that high bound goals for timber, range, watershed, and State and private forestry funding might not be high enough.

Work is underway for the next RPA update, which is due in 1985.

CONCLUSION

Both RPA and RCA have been milestones in the Department. They have enabled the Department to look at natural resource problems in depth, on a long-range basis, and across agency lines, to an extent never before achieved.

They have involved massive public participation efforts.

And they have gone through long processes of study, debate, and thought about government and its actions that will change forever the way we look at our natural resources. . .and the job of protecting and preserving them.

Both of these forward-thinking Acts will help this country maintain a viable agriculture. . .an agriculture that is able to meet the production challenges of the 1980's. . .and for years to come.

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Introduction

The coming year, 1982, will be one of unprecedented national level attention to the natural resource aspects of agriculture. The issues were raised before but have only recently gained prominence on the national policy agenda. At the center seems to be concern about the responsiveness of U.S. agriculture to fluctuating domestic and world food demands. Response capacity depends on the quantity and quality of both land and water available for production. These resources shift into and out of agriculture in response to market signals that are modified, enhanced, or distorted by various policy instruments.

Others at this conference have addressed the overall productivity issue and water as an input to agriculture. I will focus on the land component. I will identify the current and emerging issues with respect to both quantity and quality of land available to agriculture. The former concerns shifts between agriculture and other uses. The latter concerns the productive capacity of land in agriculture. Clearly the two are related and in fact substitutes for each other. I will conclude with what I see as the most significant policy and action needs for the future.

Quantity of Land in Agriculture

Efforts to retain good land in agriculture have been important policy actions for state and local governments for many years. Farmland preservation is, of course, a political symbol for many land use purposes. To some it is a matter of

injecting some degree of rationality into the patterns of land use change at the urban fringe to assure that only when there is a real alternative use will land leave agriculture. To others it is a matter of rural aesthetics--keeping the countryside open and uncluttered. Still others use farmland preservation to fight a particular development project, like a highway or a hospital. Some who argue for farmland preservation have a genuine concern for the long-run productive capacity of the nation. There are other motives as well, and most of them are reasonably honorable. The point is that the indirect agenda in this policy area is far longer than the symbolic purpose of saving farmland. And a person's position on the issue is affected by how a particular action to preserve farmland may alter his or her opportunities.

Farmland - Is There Enough? National level attention to the farmland quantity issue has come largely because of assertions about our long-run ability to grow food. That is an appropriate national concern. Local governments and states have little basis for worrying effectively about overall farm output, beyond the importance of agriculture to the immediate local economy.

There have been significant national efforts to gather evidence on the "is there enough" question. While there is some agreement on evidence, there is substantial disagreement on interpretation of that evidence in arriving at a defensible position. Recently published statements in the matter range from the position by a newly formed farmland protection interest group in Washington, "If the present trend continues for the next decade, we will face an irreversible national and international crisis of unprecedented scope" (1), to the more sanguine conclusion by an inter-disciplinary scientific panel, "U.S. agricultural land is more than adequate to meet domestic demand at least for the next two decades, at current food price levels" (7). That was also the basic conclusion of the 1980 Resources for the Future conference on Adequacy of Agricultural land,

soon to be published as a book. One writer has asserted "...that there is no evidence that the quantity of cropland is shrinking or that shortage of food is imminent" (11). Both positions are based on the same data and the same uncertainties about future weather technology, export demands, synfuel expansion; and other variables. They just vary in the perception of urgency with respect to appropriate response now to deal with a risky future.

The most comprehensive treatment of the "is there enough" question was undertaken by the inter-agency National Agricultural Land Study. It was meant to be a systematic inquiry into the empirical roots of the issue, with recommendations for any federal action based on the evidence. There had been some thought of convening a lay commission on the model of President Johnson's Rural Poverty Commission, to focus on the political implications of policy options. The agency approach was selected instead to improve chances of sticking to the facts of the matter. The study team itself faced some of the interpretation problems noted above. There were data inconsistencies, differences in definition, and variations in viewpoint within the study team on the "so what" aspect of it all (4, 6).

There is little need to rehash the numbers on farmland demand and supply here. Basic sources are the Soil Conservation Service (SCS), National Resource Inventories, USDA Agricultural Census, potential cropland studies by SCS and the Economic Research Service (ERS) and various interpretations and extensions by ERS. Differences in definition of the key farmland categories and variations in data collection procedures over time are sufficiently confusing (and discouraging) to avoid repeating them here. Others have struggled to do so (4, 5, 7, 16). Instead, I will offer the following summary observations about farmland quantity, with particular attention to near term outlook.

Land Shifts. No doubt there will be continued economic pressure on the nation's land in agriculture. By the NALS definition of agricultural land,

about 3 million acres have been converted to nonagricultural use each year between 1967 and 1975. The estimate has been widely quoted and is the basis for the expressions of concern quoted above. It includes all rural nonfederal land except for that in transportation or under water. Brewer and Boxley (4) argue that a more realistic estimate is 875,000 acres per year during that period, based on cropland and potential cropland converted to urban use. While the magnitudes are quite different, the direction is consistent. Population mobility on the demand side and improving outputs on the supply side will continue that trend.

The Northeast, Appalachia and Southeast regions will show a declining share of the nation's cropland, while the Cornbelt and Delta regions will increase total cropland (9).

Total harvested cropland has actually increased since 1969 (9, 12) and will continue to do so in response to increasing domestic and international food demand. Six out of ten counties in the U.S. have increased their cropland in the past decade. This is a significant reversal of earlier trends. Increases will be greater in those regions with clear comparative advantage for agriculture. Historic trends in cropland harvested have followed export levels. Food exports will continue to be the dominant force affecting demand for cropland. Land added to cropland harvested will come primarily from improved pasture, since most potential cropland idled through government set-aside or land retirement programs has already returned to production. There will be some cropland idled temporarily in response to over-production of some commodities and government actions to compensate for resulting lower prices. The overall picture is one of greater short-run variability in cropland use as farmers attempt to adjust to volatile economic circumstances.

The general economic picture facing agriculture will be a major determinant of how cropland will be used. Penn (14) has characterized the world food

situation as variable, subject to wide fluctuations in food demand depending particularly on production levels in both importing and other exporting countries. Foreign demand is expected to continue to increase (13). Opportunities for output expansion in many other countries is limited, placing even greater international burden on U.S. production capability. If there is opportunity for land supply response to these higher international demands, we can expect those who can add cropland to do so and profit substantially.

But a more variable international market situation means occasional times of oversupply and depressed prices. Many farmers are caught in that squeeze in 1981, with costs, including interest costs, continuing to rise. The cost side is steadily bad, while returns alternate between good and bad. Interest rates are particularly significant as they dramatically increase cost of the credit needed to acquire various land-replacing inputs such as irrigation equipment, fertilizer or farm machinery. The result may be a more extensive agriculture, putting greater emphasis on the land component of production. Those farmers large enough to have land flexibility or internal sources of capital may respond to fluctuating demands while keeping costs under control. Farmers wanting to buy additional land may have a harder time coping with interest rates than a nonfarmer in the land market. They may be forced into a more extensive form of agriculture on the best land they have available. The cash squeeze may also push the farmer into selling his less productive land for nonfarm use. High interest rates, both indicator and instrument of economic imbalance will have a major impact on how farmland is used in 1982 and perhaps beyond.

Policy Responses Needed. There are several national policy actions needed with respect to this quantity aspect of how land will be used.

1. First, the issue of farmland adequacy must be addressed honestly, straightforwardly, systematically. The stakes are too high to permit continued bickering over the validity or magnitude of the "crisis". We must acknowledge

that the objectives of farmland preservation are many and varied. The data on land shifts are badly jumbled, though there are recent attempts to sort them out sufficiently to permit informed disagreement in policy. Still more must be done to clarify the facts.

After reviewing the major reports and papers I am convinced there is no immediate crisis in this matter of quantity of farmland. The economist in me says that linear thinking, straight-line extension of past events, has no place in reasonable policy development. People demand food and it takes land to grow food. Furthermore, price elasticity of demand for food in general is lower than that for many other competing products or services of land. Future patterns of land use will recognize those facts. Derived demand for farmland also shifts as a result of new production (or consumption) technologies, income changes, etc. I make no claim of market infallibility or even market primacy, but the fact remains that people learn from experience. They adjust to relative cost as evidence of scarcity. We are not on a blind rush toward extinction of agriculture because we run out of land.

But neither am I among those who say that all this attention to farmland preservation is self-serving rhetoric by professional alarmists (15). "Adequacy" is a normative term about which reasonable people may disagree. Different groups feel differently about future risk and uncertainty--that is what keeps Wall Street afloat. While few conversions of farmland to nonfarm use are truly irreversible, some are extremely expensive to reverse. Market response to price changes requires a certain amount of resource mobility. We must take prudent steps to facilitate adjustments that can increase our productive capacity when needed. That means better market information on land productivity and the factors that influence it. And if we want to depend on relative prices to signal approaching scarcity, we must be aware of price distortions caused by other policy variables like taxes and certain farm programs.

Farmland preservation is an issue for most states and many local governments. Many talented and sincere people are spending time and energy establishing more rational patterns of land conversion. Their concern is a pattern that retains farms and farming for the many contributions they make to a local economy. They are interested in avoiding patterns of conversion that cost taxpayers more in public services than is necessary. They want an economic climate that encourages farmers to make needed investments. These are valid goals, and therefore farmland preservation is a valid public purpose.

The federal government can be most helpful by getting the numbers straight, by helping states and localities recognize unique micro-environments for food production (like lake shore fruit growing), and making sure that federal projects like highways and federally assisted housing don't unnecessarily blunder into good farming areas.

2. The second major policy need is for greater attention to the performance of the many state and local programs to guide the pattern of agricultural land conversion and influence amount of land in farming. The number of possible observations in this laboratory for institutional analysis is enormous. Each set of rules, incentives, restrictions and bribes costs somebody something, and produces some change for the price. We need clarification of the price, distribution of cost, the changes acquired, and distribution of benefit. There have been some excellent studies, but more are needed to improve chances for design of policy based on knowledge of result. Some programs are only intended to encourage farmers by offering voluntary incentives. Others may impose strict constraints on land conversion. Results must be judged, in terms that are reasonable for the particular program.

During 1982, new state and local programs to preserve agriculture will be designed and implemented. Voters should know what they are buying and at what price. There is always some mystery in policy, just as in any commodity offered

for sale. The seller or proponent tries to create a need that only his product can fulfill. Some of that is inevitable, and probably desirable in a pluralistic society. But the myth/fact ratio needs some adjustment in this matter of quantity of land for farming.

Quality of Land in Agriculture

Crosson and Brubaker in their forthcoming study by Resources for the Future predict a 22% increase in average soil loss per acre associated with additional cropland harvested to help meet world food demands (8). At least part of the added cropland will be more erosive than land already in production. Thus, outlook for this quality aspect of how land will be used is strongly influenced by overall cropland demands of the future. The other key variable in this outlook picture is the degree to which soil conservation techniques and programs are successful in abating erosion on existing and additional cropland.

Erosion Levels. We know from the 1977 National Resource Inventory that erosion is concentrated on a relatively small portion of our nation's cropland. Over 70% of "excess erosion" (greater than 5 tons per acre per year) is found on about 8% of tilled acreage. Regions with consistently high rates include the Palouse and Columbia Plateau areas of Idaho and eastern Washington, parts of the southern Mississippi Valley, southern Iowa and northern Missouri. Intensive row crop agriculture tends to be the most erosive. Modern farm machinery works best on long straight rows with few breaks for terraces or contouring. Corn, soybeans and grains in highest world demand are also particularly erosive. Increased acreage of these crops in Iowa in the early 1970s produced higher erosion rates (2). Farmers have various artificial substitutes for topsoil lost through erosion. But only when the topsoil is deep enough to sustain these high erosion rates will the land respond to soil-replacing technology like fertilizer and new seed varieties. Erosion is most economically significant where soils

are productive but shallow and losses affect productivity of commodities for which there is a significant market. Batie points out that in the highly erosive parts of west Tennessee, 35% of the erosion is on 15% of the cropland producing but 7% of the state's output (3). Erosion of poor quality soils may be of concern for other reasons--like water pollution.

While erosion is concentrated, soil conservation is not, or at least has not been in the past. There are methods for retaining the quality of land in agriculture, but they require action by the farmer. The prevailing policy question is how to get those practices on the ground in areas where they will make a difference. Thus it is the delivery of good conservation practices that will determine land quality for future food production. Unless there are changes to the package of institutions for delivery of conservation practices I see no reason to believe that erosion rates will be reduced. In fact, there is a good chance we will see more erosion as more cropland is added. Our current delivery system emphasizes broad, nation-wide application, based on technical advice and cost-sharing as a delivery mode.

Policy Responses. The Soil and Water Resources Conservation Act of 1977 (RCA) has raised the visibility of conservation policy. It has also called attention to policy performance, the pay-off from practices or particular means for getting those techniques in place. The political environment for policy in this area is far more heterogeneous than ever before. A more diverse set of interest groups has taken positions on productivity, off-site effects of erosion and related issues (10).

Improved soil conservation policy for 1982 and beyond must deal with how and where soil-saving practices are put in place. Both imply some disruption of our existing delivery system.

The where of future soil conservation effort is perhaps most easily managed. "Targeting" is the key word, to focus effort where the pay-off will be greatest.

Data on erosion severity and economic consequence are available or being collected. The existing delivery network of soil conservation districts and state conservation committees has relied on reasonably consistent federal funding from year to year. Redistributing those funds will cause some strain. Some states and counties will have too little erosion to worry about. The question of whose priorities count will be important. National targeting would leave out some states. State level targets would presumably sacrifice some national efficiency but preserve the delivery structure and reduce the political costs. Some counties would likely lose funds and technical assistance for soil and water conservation with state targeting. This has happened already in some states, and the districts are responding by taking on new roles (10).

Block grants are a popular funding approach for the current administration, including USDA. For soil conservation, that could mean major reliance on state level priorities. Overall impact on soil erosion would depend on whether those block grants are ear-marked for conservation and whether they would represent additional funds or just replacement of dollars currently distributed by S.C.S. If it were the latter, a state soil conservation effort would essentially replace the federal system in place.

I suspect that we will have soil conservation targeting in the next few years. While there will be some national targeting, all states will receive some funding with greater latitude to determine their own priorities. There is some potential here for more efficient allocation of conservation dollars. But real performance in getting to the most severe erosion problems will depend on consistent application of severity standards and the costs associated with this new form of administrative overhead.

The more troublesome aspect of new conservation policy will be how to get proven techniques on the ground once someone decides where the erosion problems are. The basic concern is how to get the farmer's attention sufficiently to

change his or her management behavior with respect to erosion. At issue is allocation of the cost of erosion abatement.

Case study data indicate that reduced tillage agriculture is a paying proposition for many farmers, depending on the soil, crop and any pest problems. In those cases, the how may be just further education and technical assistance. Taxpayers pick up the cost of helping farmers act in an economically rational manner.

The problem comes when conservation apparently does not sufficiently increase productivity or yield for short-run income and is not fully reflected in land value in the longer run. In that situation the farmer lacks a financial incentive to put conservation practices on his land. If conservation improves productivity, and if productivity is a valuable asset, the farmer should have an incentive to conserve. The question is whether that incentive is strong enough to get action. He may have other incentives, like the stewardship motive, but these are more difficult to rely on. Even the best of intentions have a price and when incomes are down or incentives for production are high, erosion control becomes a lower priority. The stakes change from year to year with commodity prices and other factors.

Our current delivery system seeks to alter the economic circumstances for the cooperating farmer by picking up part of the cost and providing technical help. Social gain is accomplished by acquiring a change in farmer behavior. Discretion stays with the farmer; cost of conservation is borne by the taxpayer. There is no assurance that those with the greatest erosion problem can be convinced to take part. Some would refuse even if full costs were paid.

The RCA process identified several alternative ways to get practices in place once the high erosion areas have been identified and a targeting strategy worked out. Most of them involve shifting more of the responsibility to the farmer. Any such cost shift must stand a test of political acceptability. The

policy question for the next few years is whether farmers, and perhaps there-
fore consumers, should be asked to accept more of the direct cost for achieving
an efficient pattern of soil conservation. That question has already been answered
in the affirmative with respect to the quantity of land in agriculture. We have
exclusive agricultural zoning in many local governments around the country.

As more nonfarmers move to rural areas the acceptable allocation of rights
and obligations inherent in fee ownership of farmland may shift. As Batie has
pointed out (2) the Supreme Court of Iowa has already held that mandatory erosion
abatement may be a legally acceptable condition of ownership. I suspect that in
years ahead, more attention will be given to these delivery systems that re-
possess some of the "right to erode".

Conclusions

There are many economic and institutional factors affecting the outlook for
the quantity and quality of land in agriculture. Key to it all, though, are the
management choices by farmers. Land preserved for agriculture is wasted unless
someone has the skill and incentives to employ that land efficiently. Conserva-
tion methods that deprive the farmer of the discretion he needs to use his land
effectively will lose the war for the sake of a small skirmish. Given the apparent
absence of productive slack in agriculture, at least in any long term sense, bad
policy in these areas can be very costly. We must not lose sight of the relation-
ships among various policy areas that deliberately or otherwise alter the signals
facing the producer. Brewer and Boxley make a very important point in question-
ing the validity of land as the dominant policy instrument in the relationship
between supply and demand for food (4). Both quantity and quality of land used
in farming are influenced substantially by tax policy which uses land ownership
as indicator of ability to pay taxes, levies service charges on a front foot basis,
and grants major income tax deductions for owners. Gasohol expansion could

constitute a major claim on farm output. Export policies may directly affect a farmer's decision to buy land or install adequate conservation. High interest rates, at least partly a policy action, may so affect the cash flow on a farm as to make voluntary conservation irrational. On the other hand, subsidized credit may help the farmer buy more land rather than take care of what he has.

To come back to the assertion made in the opening paragraph, resource problems will be high on the policy agenda for agriculture in coming years. The compelling need is to avoid segmenting attention to the sets of incentives that influence food production. Land quality and quantity are important parts of a more integrated approach to understanding and improving our food system.

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OUTLOOK '82



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IMPACT OF IRRIGATION ON AGRICULTURE

While the title assigned to me for this paper is "Impact of Irrigation on Agriculture" because of the wide range of crops produced under irrigation in the United States and the wide variation in irrigation methods, costs and markets for the resulting commodities as well as the time limitation for my presentation, I shall restrict my paper to irrigation impacts in the central Great Plains Region of the United States. Since the great bulk of my experience with irrigated agriculture has been in Nebraska and from my travels in the Great Plains Region, this is the type of irrigated agriculture with which I am most familiar.

My first acquaintance with on-farm irrigation occurred in the early 1940's when I worked on irrigated farms near Holdrege in Phelps County, Nebraska just prior to and following my military service with the U.S. Army during World War II. After having watched seven straight years of crops on our family farm in Southwest Nebraska during the Drought and Depression years of the 1930's either wither and die or amount to near total failure, my first exposure to irrigated agriculture in 1943 (mudding in lathboxes in irrigation ditches) during the early years of the Central Nebraska Public Power & Irrigation District project gave me a great appreciation for the value of irrigation water and what it can mean to an individual farm or for a community.

As a current partial owner with my two brothers and our wives of a family farm partnership in Southwest Nebraska where we utilize center-pivot irrigation systems to produce corn for grain, I have some practical exposure to the costs and concerns of irrigation farmers to go along with my academic training and experience relating to irrigation economics. One of the best examples I can cite relative to the economic impact of irrigation relates to our own family farm which lies in an 18-inch long-time average annual precipitation zone. Prior to 1973 when this land had been farmed for decades as non-irrigated land in a summer fallow--winter wheat 2-year rotation, the local County ASCS historic average yield of hard red winter wheat on this farm was 35 bushels per acre. Since half of the land lay idle each year to accumulate soil moisture while the other half was producing wheat, the average productivity of that land was 17.5 bushels of wheat per acre per year.

Since 1973 when we acquired this land and installed irrigation wells, turbine pumps, diesel motors and center-pivot systems and began producing corn for grain under irrigation, our 8-year average yield has been just over 140 bushels per acre of No. 2 yellow corn (at 15.5% moisture). It doesn't require too much imagination to realize that the potential gross and net incomes from a change in productivity of the same farm land from 17.5 bushels of wheat per acre per year to 140 bushels of corn per acre per year are considerably different. Obviously, not all of the increase in productivity results in corresponding increases in net profit each year, but the chances of severe crop losses due to drought or poor rainfall distribution during the growing season which are a constant threat for non-irrigated crop production in this area, have been eliminated by conversion of this land to irrigation.

Undoubtedly, one of the most controversial issues in Nebraska today relative to agri-

culture concerns center-pivot irrigation development in the 16-million acre region known as the Nebraska Sand Hills Region in north central Nebraska. Ever since this land was first settled by cattle ranchers, except for a few isolated quarter-sections of land which were broken from sod during the homestead era with almost total financial disaster for the "sod-buster settlers", this vast expanse of mostly virgin prairies has been maintained as grazing land for cow-calf production. During the past ten years, and especially during the last five years, a few of the ranches and some sizable tracts of this grazing land have changed ownership and have been developed for large-scale irrigation with center-pivot irrigation systems. Many of the larger developments of this type have resulted from outside investors who see an opportunity to convert relatively low-cost land selling at prices ranging from \$200 to \$600 per acre during the past five years to irrigated corn production because of the vast underground water supplies in this region.

It is readily understandable why old-line ranch families who have made their livelihood for 100 years or more from cattle production by grazing and carefully managing this fragile land resource, have a natural resentment toward outside investors purchasing and developing large tracts of this grazing land resource into large-scale intensive irrigated crop production. After all, their forefathers resented the early settlers in pioneer days who lay claim to 160-acre tracts in the Sandhills and after plowing up the native sod saw most of those settlers fail at crop production in this same region.

However, the invention of the first successful center-pivot irrigation system by Frank Zybach which he patented in 1952 and its successful application on what had been considered for decades as marginal land unsuited for irrigation during the 1960's and 1970's opened a new chapter in irrigation technology. This new technology opened literally millions of acres of land with undulating terrain and/or sandy soils not previously considered as irrigable soils to irrigation development. At the present time it is estimated that there are some 65,000 center-pivot irrigation systems in operation in the United States and thousands more have been exported to over 25 countries. Nebraska has over 20,000 center-pivot irrigation systems in use on farms and ranches irrigating over 2.6 million acres of land, or over 30% of these systems in the United States.

The management of intensive crop production under center-pivot irrigation in the Nebraska Sand Hills Region is not an easy thing because of the high susceptibility of these soils to wind erosion -- and windy conditions are almost a certainty each spring at and following spring planting operations. Some of these developments have been very successful under good tillage and management operations utilizing minimum tillage to keep the crops residues on the soil surface, while some developments have been notoriously unsuccessful. Despite the hazards involved, the good operators who are careful in their site selection for irrigation installations and who maintain good crop residue cover have been able to achieve average yields of corn in the 120 to 150 bushels per acre range. Consequently, some investors attracted to this region see it as a "New Frontier" for irrigation development and some large-scale operators have developed sizable tracts of land with as many as 50-100 pivots per unit. Despite the resentment of the native ranchers in the region, early attempts to utilize rural zoning laws and regulations as one means to try to control this type of irrigation development in the Nebraska Sand Hills Region haven't been able to gain the support of the majority of the ranchers who are opposed generally to any type of government controls on the use of their land.

One of the basic economic facts of life which has helped to bring about this type of irrigation development in the Nebraska Sand Hills Region, in addition to the appeal of low initial land investment costs, is the fact that in most of the region, it normally requires from 15-20 acres of native grassland to carry one cow and calf through the year. The resulting rental value of this type of grazing land has been in the \$10-15 per acre range so that the total gross income potential for this type of land in its native state is from \$1,600 to \$2,400 per quarter-section of land. When good operators can develop this same type of land for center-pivot irrigated corn production and produce from 120-

150 bushels of corn per acre, at \$3.00 per bushel, this means gross income of from \$46,800 to \$58,500 per 130-acres irrigated in a 160-acre quarter-section of land. Now that corn prices paid to farmers in Nebraska are at the \$2.35 to \$2.50 per bushel level, the economic incentive to develop this type of land for irrigation has been slowed considerably.

One of the important impacts of irrigation is the multiplier effect on the local, state and national economies which occurs when non-irrigated land is converted to irrigated crop production with much higher productivity and more intensive management. The one-time conversion to irrigated crop production or the initial investment impact that occurs when wells, pumps, motors, center-pivot systems and related components are installed (current estimate for a complete quarter-section 130-acre center-pivot system, well, pump, motor and related components is about \$70,000 or about \$540 per irrigated acre) results in considerable economic activity when conversion to irrigation occurs in those areas where ground water supplies are adequate for large-scale irrigation development.

In addition to the one-time initial investment impact of irrigation development, there occurs each year subsequent to development, a current annual irrigation impact for the added output from irrigated crop production over what would have been produced under non-irrigated conditions. In addition to the current direct impact at the farm level from the value of the added output from irrigated agriculture, there are other induced-by impacts resulting from the purchases of numerous goods and services necessary for irrigated crop production that would not be needed for non-irrigated production. A third important economic impact is the stemming-from impact which results from the marketing, transporting, processing and selling of the added output from irrigated crop production to final demand for domestic consumption or for export of the agricultural products to other countries.

These different economic impacts from irrigated agriculture on the Nebraska economy have been estimated by research studies conducted by Dr. F. Charles Lamphear and Dr. Theodore Roesler with the Bureau of Business Research at the University of Nebraska-Lincoln. The results of their studies for calendar year 1970 are summarized in Figures 1 and 2. Figure 3 explains their estimate of the initial investment impact of converting non-irrigated land to irrigated land from their 1963 study. Figure 4 consists of my estimates of the economic impacts from the growth of irrigation from 1970 to 1980 in Nebraska with an increase of 3,202,000 acres under irrigation during this 10-year period and the current annual impacts for 1980 alone with 7,200,000 acres irrigated and using the 1970 per acre impacts estimated by Lamphear and Roesler when the prevailing price for corn was \$1.25 per bushel.

One of the often overlooked benefits of irrigation to an individual farmer or to a community or region where a substantial proportion of the land is irrigated is the so-called "stability factor". Even in more humid areas to the east of the Central Great Plains Region, but especially so in the semi-arid regions of the country, the greatest single risk to most farmers is the threat of inadequate precipitation at the right times during the growing season and in the proper amounts to achieve suitable levels of crop production. Through irrigation, and especially with the more automated sprinkler irrigation systems such as center-pivot or the linear- or lateral-move sprinkler irrigation systems, it is possible for irrigation farmers to apply almost precisely the amount of water needed by a crop at each stage of plant growth to achieve optimum yields.

The great tragedy which has adversely affected so many farmers without irrigation in the Great Plains Region is not only the one year when precipitation is either inadequate or poorly timed in relation to crop water requirements thereby resulting in near or total crop failure, but also the misfortune to have this same situation occur in back-to-back years or worse for three or more years in a row. While many farmers in the 1930's managed to survive seven straight years of drought and depression because of diversification of their agricultural production with different crops and livestock enterprises, and while many other farmers have survived the 3-year to 5-year drought cycles in the 1950's, 1960's and 1970's, today's much higher costs of production accompanied by much

higher interest rates on borrowed capital, certainly mean that the extent and the degree of hardship would be far more severe for similar extended drought periods in the current decade of the 1980's.

With the advent of sharply higher energy prices since the oil boycott of 1973 and subsequent price increases for imported oil as the result of pricing actions by the OPEC nations, a number of observers and so-called authorities on the agricultural scene have forecast dire consequences for irrigated agriculture in the United States. Included in their arguments is the premise that the United States irrigation farmer is particularly susceptible to energy price increases because of the highly energy-intensive type of crop production practiced, especially for pump irrigators using ground water. Some of these prognosticators have gone so far as to predict either the total demise or at the minimum a very sharp curtailment of irrigation in those areas which are dependent upon ground water development using irrigation wells and sprinkler irrigation systems where the water must be pressurized. There certainly can be little argument that the resulting price increases which have occurred since 1973 for all forms of energy used to power irrigation pumps (e.g.: diesel fuel, LP gas, natural gas or electricity in most cases) have resulted in sharply higher pumping costs for irrigators using ground water from wells. However, the effect on per acre pumping costs has varied considerably with the least effect in Nebraska on those irrigators using natural gas while the greatest increase in per acre pumping costs has been for those farmers using diesel engines and diesel fuel.

Despite the fact that pumping costs for irrigation farmers using diesel engines in Nebraska (which accounts for an estimated 40% of all irrigation power units) to power irrigation pumps and center-pivot systems are exceeding \$50-60 per acre in some cases, I am not aware of any farmers in Nebraska who have given up on irrigation and are willing to go back to non-irrigated crop production. Tables 1 and 2 which I compiled on June 10, 1981 show the estimated 1981 irrigation energy costs for alternative power units for gravity-type irrigation using gated pipe in Table 1 and for center-pivot irrigation systems in Table 2 for eastern, central and western Nebraska to account for the variations in normal annual precipitation expected.

With sharply higher irrigation pumping costs in recent years, one of the major developments by the manufacturers of center-pivot and linear- or lateral-move irrigation systems has been the introduction of low-pressure systems utilizing spray nozzles instead of the rotating impulse type sprinklers. The use of these spray nozzles and lower pressure impulse type sprinklers, coupled with the use of pressure regulators to help compensate for uneven terrain, has lowered the pressure required from 75-85 psi at the pivot with the earlier systems down to 25-40 psi at the pivot depending upon the type of water distribution pattern selected and the topography of the land to be irrigated. This innovation has resulted in considerable savings in both the amount of horsepower needed for the irrigation power unit and also its annual energy-operating costs.

In my view, the relatively lower land costs and farm land prices for irrigated crop land in the Great Plains Region as compared to the much higher land costs and farm land prices prevailing in the traditional Corn Belt states of Iowa, Illinois, Indiana and Ohio, more than offset the higher costs associated with the initial investment costs and annual operating costs for irrigation in the Great Plains Region. The precise water application control technology possible with the highly automated center-pivot and linear- or lateral-move sprinkler irrigation systems makes it possible for irrigation farmers to manage much larger acreages than was possible with high-labor requirement gravity-type irrigation. This precise water application control makes it possible for these same irrigation farmers to utilize their systems to activate or even apply herbicides or some fertilizers and pesticides through their systems, to achieve uniform germination of a crop, and to optimize the other inputs needed to achieve optimum crop yields under good management.

The advantages of these new automated irrigation systems are no longer confined to

to the semi-arid regions of the Great Plains and the traditional irrigation states in the western half of the United States. Many farmers and land owners in states east of the Missouri River have elected to install these automated irrigation systems even in states with from 30 to 50 inches of annual precipitation but where either the timing or amounts of precipitation received during the growing season are not dependable.

In recent months, the news media and some observers have forecast "gloom and doom" for the irrigated areas in the Great Plains Region dependent upon the Ogallala Aquifer which underlies portions of Texas, New Mexico, western Oklahoma, eastern Colorado, Kansas, and Nebraska. The preliminary results of a \$6 million study authorized by the Congress in 1976 under the Economic Development Administration of the U.S. Department of Commerce, were presented to the Congress in February, 1981 with the final report due in 1982. Certainly, there is no question that some areas in the Great Plains Region dependent upon the Ogallala Aquifer where ground water depletion has been occurring are facing serious problems. In some limited areas in this region, especially in the High Plains Region of Texas, wells have been abandoned and some land has reverted back to non-irrigated production.

Nebraska happens to be more fortunate than most of the states in the Great Plains Region in terms of ground water availability with an estimated 2 billion acre-feet of ground water in storage according to the University of Nebraska's Conservation and Survey Division. Estimates from a recent U.S.G.S. Ogallala Aquifer Study indicate that 63% of the water in storage in the entire area where the Ogallala Aquifer exists, lies under the State of Nebraska. Ground water aquifers vary considerably in their thickness and yield potential, so there are some areas in Nebraska where adequate ground water supplies do not exist or where declines of from one to three feet per year have been occurring in recent years. Under the 1975 Nebraska Ground Water Management Act passed by the Nebraska Legislature, the responsibility for ground water management is delegated to the 24 natural resources districts established in 1972 with elected boards of directors in conjunction with the Nebraska Department of Water Resources, the Nebraska Natural Resources Commission and the Conservation and Survey Division of the University of Nebraska. Under this legislation, we now have three areas in the state with extensive irrigation development which have been designated as "Control Areas" where restrictions have been implemented to restrict further irrigation well installations and also to control the amount of irrigation water being pumped by individual farmers in those areas.

The Nebraska portion of the High Plains Ogallala Aquifer Study reported that under the assumptions used for this study, the irrigated acreage in Nebraska could expand to between 12 and 15 million acres by the years 2000 to 2020. This forecast allowed for up to two million acres which would have been irrigated at one time to revert to non-irrigated agriculture because of declining ground water availability.

Research studies conducted by our agricultural engineers and agronomists at the University of Nebraska over the past 10 years clearly demonstrate that with proper irrigation scheduling based upon actual crop water requirements during the growing season and using the automated sprinkler irrigation systems which enable irrigators to control precisely the amount of water applied per application, it is possible to reduce normal past water pumpage by irrigators by from one-fourth to as much as one-half of that water normally pumped during an irrigation season. Irrigators today are much more ready to accept these research results that demonstrate the feasibility of reductions in the amount of water pumped now that energy costs to pump irrigation water represent a significant proportion of their annual crop production costs.

Contrary to some prognosticators who foresee a bleak future for irrigated agriculture, I remain optimistic about the future of irrigated agriculture and especially for the adaptation of highly automated irrigation equipment such as center-pivot systems and the

linear- or lateral-move irrigation systems which offer so many advantages to irrigation farmers. In fact, I firmly believe that during the next 10-20 years, we will see a substantial shift away from the more inefficient methods of gravity or flood-type of irrigation which require more water than these highly automated systems. The combination of labor-saving technology of these automated irrigation systems combined with their lower total water requirement and precise water application control coupled with their ability to also apply some fertilizer solutions, some herbicides and pesticides will result in their replacement of a substantial acreage now irrigated by gravity or flood-type of irrigation.

If the United States is to continue to be the major producer and exporter of agricultural commodities to help meet the food and fiber needs of a growing world population, estimated by demographers to exceed 6 billion people by the year 2000, then it is imperative that greater attention and high priority be given to the conservation and efficient utilization of our nation's invaluable water and land resources. As one example, data compiled by our Nebraska Department of Water Resources in cooperation with the U.S. Geological Survey show that, on the average, approximately one million acre-feet of water flows into the State of Nebraska in rivers and streams but over seven million acre-feet flows out of the state. Unfortunately, a substantial part of these annual flows occurs in the late winter months or the early spring months, too early for diversion into canals for irrigation. Since there are relatively few dams and reservoirs to store these excess high flows, much of the water flows out of the state virtually unused.

Let me hasten to add that I do not advocate drying up our rivers and streams by storing all of the annual flows of these surface waters in the state, because I recognize the need for dependable river flows to supplement municipal and industrial water supplies as well as for ground water recharge, and for carrying and dilution of the municipal sewage effluents, in addition to the need for satisfactory fish and wildlife habitat. However, we have over 70 years of river flow data in the Platte River system and this data proves conclusively that since our largest dam and reservoir (Lake McConaughy on the North Platte River) was built in the late 1930's, the river flows in the Platte River system below the dam have been far more dependable and constant than in the years prior to the dam's existence.

It seems to me that the need to conserve our nation's water supplies to meet the needs of our people and to provide a dependable water supply for irrigated agriculture to help provide food for the world is so critical, we need to place a very high priority on the conservation, storage and efficient utilization of both our invaluable surface and ground water supplies. The technology needed to harness and to manage efficiently both our surface water and ground water resources are available from our past experience and from our research and on-farm experience with new highly automated systems of water delivery to the farm and on the farm. What we need to do is to utilize this reservoir of technology and add to it for the benefit not only of our current generation but for generations to come both in the United States and to help meet the growing demand for food supplies for current and future generations of people in other food-deficit nations.

FIGURE 1

ECONOMIC IMPACT OF IRRIGATION

(Based on UNL Bureau of Business Research Report #8, Sept., 1974)

Current Direct Impact: = Net increase in the output of irrigated crops over what would have been produced under dryland farming conditions

(In 1970 this amounted to \$251.2 million in Nebraska)

Current Induced-by Impact: = Increases in business activity of the Nebraska Sectors which is required to enable these sectors to sell the necessary inputs to Irrigated Crops so that Sector can produce the net increase in output (Fuel, Seed, Fertilizer, Chemicals, Labor, Financial Services, etc.)

(In 1970 this amounted to \$334.5 million in Nebraska)

Current Stemming-from Impact: = Increases in activity of the Nebraska economy which were required to enable the processing sectors to process and sell to external markets (Final Demand) a part of the increased output of irrigated crops (transporting, marketing, and processing the added output from irrigated sector)

(In 1970 this amounted to \$1,412.4 million in Nebraska)

(In 1970, the combined current impacts amounted to \$1,998.1 million)

Source: "Impact Analysis of Irrigated Agriculture on Nebraska's Economy, 1967-70" by Dr. F. Charles Lamphear and Theodore W. Roesler, Bureau of Business Research, University of Nebraska-Lincoln, Sept., 1974

FIGURE 2

SUMMARY OF CURRENT IMPACTS OF IRRIGATED AGRICULTURE

ON THE NEBRASKA ECONOMY, 1970*

Type of Economic Activity	Per Dollar of Increased Output	Per Acre of Irrigated Crops	Total Economic Impact in Nebraska
Current Direct Effect	\$1.00	\$62.82	\$251.2 million
Induced-by Effect	\$1.33	\$83.66	\$334.5 million
Stemming-from Effect	\$5.62	\$353.29	\$1,412.4 million
Totals	\$7.95	\$499.77	\$1,998.1 million

*Based upon study by Dr. F. Charles Lamphear and Dr. Theodore Roesler,
Bureau of Business Research, University of Nebraska-Lincoln
"Impact Analysis of Irrigated Agriculture on Nebraska's Economy, 1967-70"
Nebraska Economic & Business Report #8, Sept., 1974

FIGURE 3

DIRECT INVESTMENT IMPACT RESULTING FROM IRRIGATION DEVELOPMENT

(Based on study by Dr. Theodore Roesler, University of Nebraska, 1963)

Direct investment effects resulting from irrigation development refer to capital improvements needed to provide and distribute the water supply used for irrigation and to any additional farm equipment, building, etc. needed because of irrigation.

Examples:	Irrigation Wells	Additional Tractors and Equipment
	Irrigation Pumps	Pickups and Trucks
	Irrigation Motors	Storage and Handling Equipment
	Land Leveling	Grain Bins, etc.
	Gated Pipe	Special Tools
	Sprinkler Systems	

The spending and respending activity in the Nebraska economy associated with the Direct Investment impact resulting from irrigation was estimated to be \$7,123,000 for the estimated volume of transactions generated by the hypothetical transfer of 10,000 acres of dryland area to the irrigated crops sector.

Expressing this on a per acre basis, approximately \$712 of transactions are generated in the Nebraska economy as the direct investment impact when one acre of cropland is transferred from dryland to irrigation under the conditions assumed in the Roesler study.

This is a one-time effect although additional investments of capital improvements may be made in years following the conversion from dryland to irrigation.

ESTIMATED ECONOMIC IMPACT OF IRRIGATION IN NEBRASKA

(Based on "Impact Analysis of Irrigated Agriculture on Nebraska's Economy, 1967-1970", published by the Bureau of Business Research, University of Nebraska, Lincoln, September, 1974.)

Compiled by
Dr. Leslie F. Sheffield, Extension Farm Management Specialist
Department of Agricultural Economics, University of Nebraska
September 1, 1981

I. Increase in Irrigated Acres, 1970-1980:

1980 Total Irrigated Acres in Nebraska	=	7,200,000
1970 Total Irrigated Acres in Nebraska	=	3,998,000
Increase in Irrigated Acres, 1970-1980	=	3,202,000

II. Estimated Economic Impacts on the Nebraska Economy:

A. Direct Investment Impact, Increase from 1970-1980:

3,202,000 Acres @ \$712/acre (1963 Study) = \$2,279,824,000

B. Current Estimated Economic Impact for 1980 Only:

Current Direct Effect:

7,200,000 acres X \$62.82/acre = \$452,304,000

Current Induced-by Effect:

7,200,000 acres X \$83.66/acre = \$602,352,000

Current Stemming-From Effect:

7,200,000 acres X \$353.29/acre = \$2,543,688,000

Sub-total, Estimated 1980 Current Effects = \$3,598,344,000
(Based on 1970 prices when corn price = \$1.25/bushel)

C. Estimated 100% Inflation Factor from 1970-1980:

200% of \$3,598,344,000 = \$7,196,688,000

Table 1: Estimated 1981 Energy Costs For Alternative Power Units For Pumping Irrigation Water Using Gravity Irrigation With Gated Pipe Without Tailwater Recovery System with Four Alternative Energy Sources At Three Levels Of Pumping, 750 hrs, 1,100 hrs, and 1,400 hrs.

Compiled June 10, 1981 by Dr. Leslie F. Sheffield, Extension Farm Management Specialist, Institute of Agriculture & Natural Resources, University of Nebraska-Lincoln. (Based on 120 acres irrigated 175 ft. of total dynamic head, 1,000 gpm, 10 psi for gated pipe 65 continuous brake horsepower engine or 60 hp electric motor and 75% pumping plant efficiency with three different seasonal pumping averages, 750 hrs for Eastern Nebraska, 1,100 hrs for Central Nebraska and 1,400 hrs for Western Nebraska. No energy costs included in this example for Tailwater Recovery System. If Tailwater Recovery and Re-use System for entire field irrigated, this should result in approximately 20% reduction in number of hours of pumping.)

Type of Power Unit	Estimated 1981 Energy Prices	*Whp-hrs Per Unit of Energy	Estimated Energy Use/hr	Estimated Total Energy Used for the Season			Estimated Energy Cost For 130 Acres for Season			Estimated Energy Cost Per Acre for the Season		
				750 hrs	1,100 hrs	1,400 hrs	750 hrs	1,100 hrs	1,400 hrs	750hrs	1,100hrs	1,400hrs
				Acre-Inches of Water Pumped =								
I. Electric **	\$.07/kwh	0.885/kwh	50.0/kwh	37,500 kwh	55,000 kwh	70,000 kwh	\$2,625.00	\$3,850.00	\$4,900.00	\$21.88	\$32.08	\$40.83
II. Natural Gas (MCF = 1,000 cu.ft.) (Approximately 35% Nebraska Irrigators on Straight Rate 65% on Firm Rate, 1981 Rates Effective Dec. 1, 1980.)												
A. Straight Rate	2.18/MCF	61.7/MCF	0.7162 MCF	537 MCF	788 MCF	1,003 MCF	1,170.66	1,717.84	2,186.54	9.76	14.32	18.22
B. Firm Rate	2.23/MCF	61.7/MCF	0.7162 MCF	537 MCF	788 MCF	1,003 MCF	1,197.51	1,757.24	2,236.69	9.98	14.64	18.64
III. Propane*	.57/gal.	6.89/gal	6.41 gal	4,807 gal	7,051 gal	8,974 gal	2,740.27	4,019.07	5,115.18	22.84	33.49	42.63
IV. Diesel	1.17/gal	12.5/gal	3.54 gal	2,655 gal	3,894 gal	4,956 gal	3,106.35	4,555.98	5,798.52	25.89	37.97	48.32

* Based on Nebraska Performance Standards for Deep Well Turbine Pumping Plants, Based on Water Horsepower Hours. Whp. Hours = Total Dynamic head X GPM 3960

** Based on estimated average of irrigation power rates to be charged by the various REA Districts in Nebraska in 1981. This includes standby horsepower charge or annual hook-up charge based upon nameplate horsepower rating for the irrigation motor.

Table 2: Estimated 1981 Energy Costs For Alternative Power Units For Irrigation With Center-Pivot Installations, Ranging From 100-130 hp, Nebraska.

Completed June 10, 1981 by Dr. Leslie F. Sheffield, Extension Farm Management Specialist, Institute of Agriculture & Natural Resources, University of Nebraska-Lincoln. (Based on 130 acres irrigated 325 ft. of total dynamic head, 300 gpm, 65 psi at pivot, 110 continuous brake horsepower engine or 100 hp electric motor and 75% pumping plant efficiency with three different seasonal pumping averages, 600 hrs for Eastern Nebraska, 900 hrs for Central Nebraska and 1,200 hrs for Western Nebraska.)

Type of Power Unit	Estimated 1981 Energy Prices	*Whp-hrs Per Unit of Energy	Estimated Energy Use/hr	Estimated Total Energy Used for the Season		Estimated Energy Cost For 130 Acres for Season		Estimated Energy Cost Per Acre for the Season		
				600 hrs	900 hrs	1,200 hrs	600 hrs	900 hrs	1,200 hrs	1,200hrs
I. Electric **	\$.07/kwh	0.885/kwh	74.2 kwh	44,520 kwh	66,780 kwh	89,040 kwh	\$3,116.40	\$4,674.60	\$6,232.80	\$47.94
II. Natural Gas (MCF = 1,000 cu. ft.) (Approximately 3% Nebraska Irrigators on Straight Rate 65% on Firm Rate)										
A. Straight Rate	2.18/MCF	61.7/MCF	1.0641 MCF	638 MCF	958 MCF	1,277 MCF	1,390.84	2,088.44	2,783.86	21.41
B. Firm Rate	2.23/MCF	61.7/MCF	1.0641 MCF	638 MCF	958 MCF	1,277 MCF	1,422.74	2,136.34	2,847.71	21.91
III. Propane.	.57/gal	6.89/gal	9.53 gal	5,718 gal	8,577 gal	11,436 gal	3,259.26	4,888.89	6,518.52	50.14
IV. Diesel	1.17/gal	12.5/gal	5.25 gal	3,150 gal	4,725 gal	6,300 gal	3,685.50	5,528.25	7,371.00	56.70

* Based on Nebraska Performance Standards For Deep Well Turbine Pumping Plants, Based on Water Horsepower Hours. Whp. hours = Total Dynamic head X GPM
3960

** Based on estimated average of irrigation power rates to be charged by the various REA Districts in Nebraska in 1981. This includes standby horsepower charge or annual hook-up charge based upon nameplate horsepower rating for the irrigation motor.

Table 1: Estimated 1981 Energy Costs For Alternative Power Units For Pumping Irrigation Water Using Gravity Irrigation With Gated Pipe Without Tailwater Recovery System with Four Alternative Energy Sources At Three Levels Of Pumping, 750 hrs, 1,100 hrs, and 1,400 hrs.

Compiled June 10, 1981 by Dr. Leslie F. Sheffield, Extension Farm Management Specialist, Institute of Agriculture & Natural Resources, University of Nebraska-Lincoln. (Based on 120 acres irrigated 175 ft. of total dynamic head, 1,000 gpm, 10 psi for gated pipe 65 continuous brake horsepower engine or 60 hp electric motor and 75% pumping plant efficiency with three different seasonal pumping averages, 750 hrs for Eastern Nebraska, 1,100 hrs for Central Nebraska and 1,400 hrs for Western Nebraska. No energy costs included in this example for Tailwater Recovery System. If Tailwater Recovery and Re-use System for entire field irrigated, this should result in approximately 20% reduction in number of hours of pumping.)

Type of Power Unit	Estimated 1981 Energy Prices	*Whr-hrs Per Unit of Energy	Estimated Energy Use/hr	Estimated Total Energy Used for the Season			Estimated Energy Cost For 130 Acres for Season			Estimated Energy Cost Per Acre for the Season		
				750 hrs	1,100 hrs	1,400 hrs	750 hrs	1,100 hrs	1,400 hrs	750hrs	1,100hrs	1,400hrs
I. Electric **	\$.07/Kwh	0.885/Kwh	50.0/Kwh	37,500 Kwh	55,000 Kwh	70,000 Kwh	\$2,625.00	\$3,850.00	\$4,900.00	\$21.88	\$32.02	\$40.83
II. Natural Gas (MCF = 1,000 cu.ft.) (Approximately 35% Nebraska Irrigators on Straight Rate 65% on Firm Rate, 1981 Rates Effective Dec. 1, 1980.)	1.00/MCF	61.7/MCF	0.7162 MCF	537 MCF	788 MCF	1,003 MCF	1,170.66	1,717.84	2,186.54	9.76	14.32	18.22
A. Straight Rate	2.18/MCF	61.7/MCF	0.7162 MCF	537 MCF	788 MCF	1,003 MCF	1,170.66	1,717.84	2,186.54	9.76	14.32	18.22
B. Firm Rate	2.23/MCF	61.7/MCF	0.7162 MCF	537 MCF	788 MCF	1,003 MCF	1,197.51	1,757.24	2,236.69	9.98	14.64	18.64
III. Propane*	.57/gal	6.89/gal	6.41 gal	4,807 gal	7,051 gal	8,974 gal	2,740.27	4,019.07	5,115.18	22.84	33.49	42.63
IV. Diesel	1.17/gal	12.5/gal	3.54 gal	2,655 gal	3,994 gal	4,956 gal	3,106.35	4,555.98	5,798.52	25.89	37.97	48.32

* Based on Nebraska Performance Standards for Deep Well Turbine Pumping Plants, Based on Water Horsepower Hours. Whp. Hours = Total Dynamic Head X GPM / 3960

** Based on estimated average of irrigation power rates to be charged by the various REA Districts in Nebraska in 1981. This includes standby horsepower charge or annual hook-up charge based upon nameplate horsepower rating for the irrigation motor.

Table 2: Estimated 1981 Energy Costs For Alternative Power Units For Irrigation With Center-Pivot Installations, Ranging from 100-130 hp, Nebraska.

Compiled June 10, 1981 by Dr. Leslie F. Sheffield, Extension Farm Management Specialist, Institute of Agriculture & Natural Resources, University of Nebraska-Lincoln. (Based on 130 acres irrigated 325 ft. of total dynamic head, 300 gpm, 65 psi at pivot, 110 continuous brake horsepower engine or 100 hp electric motor and 75% pumping plant efficiency with three different seasonal pumping averages, 600 hrs for Eastern Nebraska, 900 hrs for Central Nebraska and 1,200 hrs for Western Nebraska.)

Type of Power Unit	Estimated 1981 Energy Prices	*Whp-hrs Per Unit of Energy	Estimated Energy Use/hr	Estimated Total Energy Used for the Season			Estimated Energy Cost For 130 Acres for Season			Estimated Energy Cost Per Acre for the Season		
				600 hrs	900 hrs	1,200 hrs	600 hrs	900 hrs	1,200 hrs	600 hrs	900 hrs	1,200 hrs
				Acre-Inches of Water Pumped =								
I. Electric **	\$.07/Kwh	0.885/Kwh	74.2 Kwh	44,520 Kwh	66,780 Kwh	89,040 Kwh	\$3,116.40	\$4,674.60	\$6,232.80	\$23.97	\$35.96	\$47.94
II. Natural Gas (MCF = 1,000 cu. ft.) (Approximately 35% Nebraska Irrigators on Straight Rate 65% on Firm Rate)												
A. Straight Rate	2.18/MCF	61.7/MCF	1.0641 MCF	638 MCF	958 MCF	1,277 MCF	1,390.84	2,088.44	2,783.86	10.70	16.06	21.41
B. Firm Rate	2.23/MCF	61.7/MCF	1.0641 MCF	638 MCF	958 MCF	1,277 MCF	1,422.74	2,136.34	2,847.71	10.94	16.43	21.91
III. Propane.	.57/gal	6.89/gal	9.53 gal	5,718 gal	8,577 gal	11,436 gal	3,259.26	4,888.89	6,518.52	25.07	37.61	50.14
IV. Diesel	1.17/gal	12.5/gal	5.25 gal	3,150 gal	4,725 gal	6,300 gal	3,685.50	5,528.25	7,371.00	28.35	42.53	56.70

* Based on Nebraska Performance Standards For Deep Well Turbine Pumping Plants, Based on Water Horsepower Hours. Whp. hours = Total Dynamic head X GPM
3960

** Based on estimated average of irrigation power rates to be charged by the various REA Districts in Nebraska in 1981. This includes standby horsepower charge or annual hook-up charge based upon nameplate horsepower rating for the irrigation motor.

Ronald L. Meekhof, ERS:NED:Inputs and Finance

1982 Agricultural Outlook Conference, Session #28

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INTRODUCTION

Major changes in the regulatory environment affecting the agricultural sector have occurred in the recent past and are likely to continue. These changes affect broad areas including the access, price and use of farm inputs, crop production, the marketing and transportation of crops, and food safety and quality. The issuance of Executive Order 12291 by President Reagan signals further changes in the regulatory environment with significant repercussions on the food and agricultural sectors.

My comments will focus on important deregulatory actions in energy, pesticide, and financial markets and their consequent impacts.

ENERGY

Petroleum

Prior to the National Energy Act crude oil prices were controlled at the wellhead. Domestic deregulation of crude oil prices began in 1979 and complete deregulation was scheduled for October 1981. However, shortly after taking office President Reagan accelerated the schedule to effect immediate deregulation.

It is probably not necessary to evidence what has been termed the "whole system of organized waste" that resulted from U.S. energy policies prior to deregulation and that eventually led to the policy induced energy crisis. It is sufficient to indicate that crude oil prices that were held to below world market levels led to inefficient use of petroleum supplies, further compounded disincentives for domestic production, and postponed the development of alternative fuel sources.

As deregulation took effect, the U.S. dependence on oil imports declined dramatically. Crude oil imports fell from 8.8 million barrels a day in 1977 to 6.8 million barrels a day in 1980 and currently stand at slightly over 5 million barrels a day. Since 1978 domestic production has grown slightly, the percent of profitable exploratory oil wells rose from 38 to 44 percent and total wells completed increased over 50 percent from 17,775 to 26,985.

Reductions in the demand for petroleum products have been equally dramatic. National gasoline consumption, 3 percent of which is consumed by agriculture has declined 11 percent since 1978. During this same period, distillate oil consumption, 6 percent of which is consumed by agriculture, has declined 16 percent (4).

Energy prices have risen significantly to better reflect the relative world scarcity of liquid fuels. The moderate increase in gasoline and diesel prices of 8.5 and 20.3 percent, respectively, over the past year reflect temporary oversupply conditions for gasoline and are not indicative of the long term real price increase that most analysts expect. In the years ahead, decontrol will further increase domestic production, lower imports, and reduce susceptibility to supply interruptions which are particularly damaging to agriculture because of its highly seasonal demand and inability to postpone most cropping operations. The price increases resulting from decontrol have also spurred the potential development and widespread use of alternative fuel sources such as biomass, coal and shale liquids, and solar devices. The fuel and energy derived from these sources can be competitive with petroleum fuels, thereby expanding the types of domestic energy sources and enhancing the energy security of the United States.

Natural Gas

Deregulation of natural gas prices will have significant impacts on the agricultural sector. Given the exemption from incremental increases in the ceiling price for new gas (gas discovered since 1977) that will occur through 1984, the agricultural sector has been sheltered from increases in natural gas prices that have occurred elsewhere in the economy. Therefore, natural gas price increases to agricultural users are likely to exceed those to all other industrial users.

Gas provides nearly 27 percent of U.S. energy needs. Agriculture is a major user of natural gas, consuming 1.28 billion cubic feet (bcf) in 1980,--6 percent of that consumed nationally. About 140 bcf is used directly by the farm sector, principally in irrigation and crop drying. The manufacturing of agricultural chemicals, mainly nitrogen fertilizers, consumes about 700 bcf. About 60 percent of the natural gas used in fertilizer production is as a feedstock, for which there is no apparent substitute. Food processing uses 440 bcf. In addition, farmers use 1.4 billion gallons of LP gas for crop drying, irrigation, and space heating. Over two-thirds of these LP supplies are processed from natural gas. Consequently LP gas can be expected to rise as well.

Projections of the impact of the scheduled decontrol differ greatly and are marked by uncertainty about potential responses in supply and demand. The amount of gas produced in various components of the natural gas supply is uncertain. Thus, it is difficult to know what fraction of gas production will be free of controls. Similarly, shifts in the demand for natural gas by residential, industrial, and utility users, each being affected in different ways by incremental

pricing provisions, would further influence price and quantity impacts. Many analysts agree however that, based on the full energy equivalency price of fuel oil, a three-fold increase in today's natural gas price of about \$2.00 per thousand cubic feet (Mcf) is possible by 1985.

An increase in natural gas prices of this magnitude could raise anhydrous ammonia prices to \$430 per ton, up from the current price of about \$250 per ton. Based on current yields and nitrogen application rates, additional production costs attributable solely to the higher 1985 ammonia price would be \$.15 and \$.19 per bushel for corn and wheat, respectively.

Several factors may keep ammonia prices from reaching this level however. First, high gas prices may encourage consumers to reduce natural gas demand through conservation and the substitution of alternative fuels, the latter being an option not available to ammonia producers in the short run. Second, the ammonia industry is the second largest consumer of natural gas at between 2-3 percent of U.S. consumption. Gas suppliers have traditionally been willing to negotiate contracts to large reliable customers at below average market prices. Existing favorable contracts should remain in effect after complete deregulation, many are due to expire by 1986. The combination of existing contracts and favorable new long-term contracts could continue to hold prices paid by ammonia producers below average national prices for natural gas. Third, increased ammonia imports from countries with lower cost natural gas supplies may prevent domestic ammonia manufacturers from passing through the full production cost increases to the farmer. Countries with the potential to increase ammonia exports to the United States, given deregulated natural gas prices include Canada, Mexico, the Soviet Union, and Trinidad/Tobago. Venezuela and Middle Eastern countries are also potential future importers of ammonia. Prevention of ammonia imports would require trade restrictions which have been proposed but denied several times since 1979.

More indepth analysis needs to be made of the impacts of natural gas deregulation on the food and agricultural sector. Such analysis is needed in light of the potential for an accelerated decontrol of natural gas prices that is reportedly being discussed within the Administration. The Fertilizer Institute has recently concluded that removal of incremental pricing provision in 1982 versus 1985 would raise natural gas costs to the fertilizer industry by \$1.13 per Mcf (3). Similar increases to producers and food processors could have a significant impact on food prices as a result of cost increases passed through by processors and adjustments in input use and production decisions made by producers in response to high fertilizer prices.

PESTICIDES

Pesticides have been regulated by the Federal Government since, The Insecticide Act of 1910 which prohibited the sale of adulterated or misbranded products. While a variety of laws have since been enacted

that affect pesticide use, three major pieces of legislation were: (1) The Federal Food, Drug and Cosmetic Act of 1938 and its amendments which established maximum tolerances of pesticide chemicals in food products, (2) The Federal Insecticide, Fungicide, and Rodenticide Act of 1947 (FIFRA), which required that all pesticides be registered before being marketed and that they contain adequate warnings regarding misuse on the label, and (3) The "Federal Environmental Pest Control Act" (FIFRA Amended 1972), which required that all pesticides must be screened on a case-by-case basis for environmental and human safety, be subjected to a cost-benefit analysis, and that the product must perform its intended function when used in accordance with widespread practice. The Federal Insecticide, Fungicide, and Rodenticide Act has been amended three times since 1972. As a matter of fact, Congress is currently again considering amending the law.

Major amendments now under consideration include: providing greater opportunity for public review of data submitted in support of registration, extending the manufacturer's exclusive data rights period, and limiting the authority of States to establish standards more rigid than those required by the Environmental Protection Agency (EPA).

The primary purpose of the regulations, particularly those contained in the 1972 act, is to increase the safety associated with using pesticide chemicals. But the regulations also increase the cost of pesticide development and registration. These costs are passed on to the farmer and ultimately to the consumer in the form of higher food prices. Regulations have increased the time required to introduce new products into the market and have reduced the number of products introduced. The number of new product registrations dropped from 10 a year in the early 1970's to two in 1977 and 1978. This rate has been increasing slightly in the last few years. High development costs tend to restrict pesticide development to major companies with the finances to withstand the added costs.

The 1972 act also required the re-registration of all previously registered pesticides to assure that they met certain environmental and health standards. The primary vehicle in re-registration is the Rebuttable Presumption Against Registration (RPAR) process. This process determines if the risks posed by a pesticide exceed specified hazard levels, and if so, weighs the benefits of using the pesticides against risks. As of March 1981, there were 28 pesticides or groups of pesticides for which RPAR's had been issued, and 11 that were undergoing pre-RPAR review. The final result of the RPAR process is the development of regulatory options which could include: registration, label modification, restricted use, or cancellation.

In the early and mid-1970's, a number of pesticides were removed from the market through Administrative Law hearings. DDT was cancelled in 1972. Aldrin and dieldrin were suspended in 1974. Chlordane was suspended and cancelled for farm use a few years later, and most crop uses of heptachlor were phased out in 1978. Farm use of DDT, aldrin and dieldrin dropped from 42 million pounds in 1966 to 2 million pounds in 1976.

More recently, EPA has taken a more selective approach, weighing benefits and risks through a more informal process (the RPAR system). The end result of this process is to propose that uses of products with high potential hazards and/or minimal potential benefits be discontinued. On the other hand, uses whose benefits are great and potential hazards are minimal are likely to be continued. There has also been increased emphasis on reducing exposure and less reliance on triggers based largely on laboratory experiments only. Actions proposed under the RPAR process may be appealed through Administrative Law procedures.

For the first 21 pesticides to be reviewed in the RPAR process, the economic impact of cancellation was estimated at over \$6 billion annually.

Concerns over the effect of pesticides on human health and the environment will continue to be important issues as will increased agricultural output, consumer prices, energy conservation, and inflation. Pesticides will continue to be reviewed and further restrictive actions are likely. However, some of these activities have already slowed down, and they will probably be less vigorously pursued in the coming years. EPA is relying more on informal negotiations with chemical companies to voluntarily withdraw uses with questionable safety aspects. The Agency also will probably make greater use of industry data in preparing their product analysis.

While most pesticide regulatory activity is concerned with safety, there are Government regulations to encourage pesticide development and use. First, the patent system and exclusive data rights features of the pesticide legislation encourage the development of new pesticide chemicals by protecting product markets. Because of added time required in research, development, and registration, many manufacturers feel the need for a longer period of protection. Extending the protected life is one of the proposals Congress is looking at in legislative amendments now being considered. Second, a Government sponsored program, the Interregional Research Project, was established by the State Agricultural Experiment Stations and the U.S. Department of Agriculture to assist growers in obtaining registrations for minor use pesticides. These are chemical uses for which manufacturers would not obtain registrations themselves, because they do not expect a sufficient market to provide a satisfactory return.

The Government also assists in promoting the adoption of improved management programs. These programs attempt to use the most effective control means consistent with reducing environmental effects and increasing returns. A study by the Congressional Office of Technology Assessment reported that Integrated Pest Management Programs utilizing biological, chemical, and cultural controls could reduce pesticide use as much as 75 percent for some major crops, preharvest pest-caused losses by 50 percent, and overall pest control costs significantly.

CREDIT

The Depository Institutions Deregulation and Monetary Control Act signed into law in 1980, is an important piece of legislation influencing the structure and performance of financial institutions. It provides comprehensive revisions in regulations that affect all depository institutions by making financial markets more competitive and thereby will necessitate adjustments in the way these institutions and banks conduct their business. The 1980 act will have a bearing on monetary control and reserve requirements, the regulation of interest rates, the authorization of automatic transfer services (ATS), negotiable orders of withdrawal (NOW), deposit insurance, the preemption of State usury laws, and other factors that influence the price and availability of credit provided to the agricultural sector. While the operations of commercial banks, mutual savings banks, savings and loan associations, and credit unions will be affected the greatest; because of interdependencies in the banking community, the operations of other agricultural lenders are likely to be influenced as well. Some provisions became effective upon enactment in late March, 1980 however, most will be phased in over several years. The major provisions include the following:

- o All depository institutions are to hold reserves on transaction accounts and on all nonpersonal time deposits. Transaction accounts include primarily time deposits, NOW and ATS accounts, and share draft accounts. Under this legislation, nonmember depository institutions will be required to adopt the same reserve requirements as those of the members of the Federal Reserve System.
- o Ceilings on rates of interest and dividends paid on deposits and accounts will be phased out by March 31, 1986. To carry out this deregulation the law provides, for but does not require raising the interest ceiling in specified increments over the six-year period. During this period, thrift institutions are required to maintain their one-quarter percentage point differential.
- o The authority for ATS accounts by banks, remote servicing units by Federal savings and loans and for share draft accounts by credit unions was extended.
- o NOW accounts were authorized for all Federally insured deposit institutions.
- o The investment authority and lending limits for savings and loans were expanded.
- o Usury ceilings on business and agricultural loans over \$25,000 (subsequently amended to \$1,000) were preempted for three years, subject to the right of the affected State to override the preemption, and replaced by a ceiling that would vary by 5 percentage points above the Federal Reserve's discount

rate. Usury laws on mortgages were preempted for three years subject to being overridden by affected States. Usury ceilings on other loans made by Federally insured depository institutions were permanently overridden, subject to State's approval with a new ceiling of 1 percentage point above the Federal Reserve's discount rate.

The impacts of these deregulatory initiatives on the competitive position of the various lenders servicing agriculture and the cost and supply of funds are complex and subject to macro- and microeconomic forces (5). Agricultural lenders not specified in the act will also be influenced by these changes.

Of major significance to agriculture are the impacts the act will have on smaller agricultural banks that, in general, have experienced relatively greater difficulty in accessing national money markets. Prior to the act, smaller rural banks were relatively isolated from national money markets and did not have to aggressively compete for deposits. This isolation also allowed small rural banks to offer loans at interest rates that were lower and more stable than those found in national markets. However, with rural savers now having greater access to higher interest rate alternatives, small rural banks will have to compete with larger regional banks that have easier access to national financial markets, greater liability management capacity and other services.

Funds to support additional credit activity should increase as a result of the Act's new reserve requirements. Vault cash should be sufficient for smaller banks, both members and nonmembers of the Federal Reserve System, to cover reserve requirements (2). Member banks have the advantage of using non-earning balances to support new credit activities instead of reserve requirements. This may not be so for nonmember banks. This will in part depend on whether State requirements are lowered by allowing nonmember banks to offset reserve requirements through balances held at Federal Reserve Banks or by qualifying passthrough balances held at other depository institutions (1). It will also depend on whether the costs of correspondent services increases to nonmember banks. Correspondent balances held to meet reserve requirements can no longer be invested. Earnings on these balances had in the past been used to compensate for services of correspondent banks.

The cost and availability of funds to smaller banks will also depend on the extent to which money market funds are recirculated to these banks. This would increase the availability of funds to smaller banks, but at a premium.

The elimination of interest rate controls on deposits and preemption of usury ceilings on loans should improve efficiency in the flow of funds to agricultural banks and increase the responsiveness of bank pricing policies to market factors. When interest rates are high, smaller banks are better able to compete for those funds that prior to interest controls and usury ceilings, went into money market funds. However, higher cost of obtaining funds and more volatile interest rates on deposits will accompany the benefits of deregulatory measures.

How will the agricultural sector be influenced by the 1980 Act, particularly in cost of funds and loan interest rates? The cost of funds to agricultural banks has already increased as a result of increased reliance on money market certificates of deposit. Because interest rates on these credit instruments are tied to yields on U.S. Government securities, agricultural banks have and will continue to be influenced by macroeconomic and national financial market forces. The higher cost of these funds however, will be balanced to some extent by greater revenues from fees, service charges and higher loan rates.

Rates to agricultural borrowers will be subjected to competitive market conditions. Of particular importance is the potential expansion in consumer lending by savings and loans and competition between depository and nondepository institutions. To the extent that the costs of funds for banks and depository institutions increase equally, the higher cost of funds will be directly reflected in high loan rates. If there are differences in the cost of funds to institutions not influenced by the act, such as U.S. Government agencies and production credit associations, banks and depository institutions may be constrained in passing along higher costs.

As provisions in the act are phased in it is certain that the cost of funds to agricultural banks, and consequently interest rates on farm loans will be more variable. However, the increased efficiency in the flow of funds in local markets and between local and national markets should insure that funds will be available during periods of financial stress. Much will depend on strategies used by agricultural banks to deal with risks associated with acquiring funds, the portfolio strategies of these banks to maintain a balance of short term profit and long term growth, and the competitive balance between agricultural banks and other farm lenders.

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1981 Agricultural Outlook Conference, Session #28

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The organizers of the conference are to be commended for scheduling this important session on the "Impact of Deregulation on Agriculture."

Comments on the Meekhof Paper.

Mr. Meekhof presented a good discussion of the effects of deregulation on energy, pesticides and credit. He documents concisely what happened when the U.S. abandoned its "system of organized waste" of energy, partially deregulated petroleum prices and permitted energy prices to rise significantly to better reflect the relative world scarcity of liquid fuels. Mr. Meekhof tells us that the price increases resulting from decontrol have also "spurred the potential development and widespread use (emphasis supplied) of alternative fuel sources such as biomass, coal and shale liquids, and solar devices. I submit that it may be premature to make such a claim. But that is a small, arguable point.

Mr. Meekhof tells us that many analysts believe that a threefold increase in natural gas prices is possible by 1985. This, he reports, could cause about a 70% increase in the price of anhydrous ammonia and raise corn production costs by about 15¢ per bushel by 1985. Mr. Meekhof cites several good reasons why natural gas prices may not record a threefold increase by 1985. His reasons convince me that the "many analysts" he refers to may be overestimating the rise in natural gas prices in prospect during the next few years -- especially since there appear to be some impediments to accelerated decontrol of natural gas prices.

Mr. Meekhof describes the familiar story of how regulations have increased the time required to introduce new pesticides into the market and reduced the number of products introduced. His

*Views expressed are those of the author and do not necessarily reflect official positions of the Council of Economic Advisers.

prognosis is that pesticides will continue to be reviewed and further restrictive actions are likely. Then, however, he makes this significant observation: "However, some of these (restrictive) activities have already slowed down, and they will probably be less vigorously pursued in the coming years. The EPA is relying more on informal negotiations with chemical companies to voluntarily withdraw uses with questionable safety aspects." These seem to be important developments. I wish that he had told us more about them.

Comments on the Ford Paper

I think that we have a better idea of the scope and purpose of the USDA's work on deregulation after hearing Mr. Ford's comments.

Mr. Ford provided me with copies of issue papers which formed the basis for some of his remarks. My comments are based partly on those issue papers.

Food Safety. This is doubtless one of the most complex and controversial of the deregulatory issues. The concerns regarding food safety are very sophisticated. There is concern over whether a particular chemical when eaten over a lifetime will increase the incidence of cancer in the Nation, whether the migration of a few parts per trillion of a particular chemical used to make a food package into the food itself will be harmful to the health of consumers, and the extent to which the Delaney clauses have become unworkable because of technology that permits detection of extremely minute traces (a few parts per trillion) of a chemical. Mr. Ford has given us a greater appreciation for the food safety issues. The working groups within the USDA and elsewhere in government who are examining whether and how food safety laws and regulations should be changed have a complex and important task before them.

Grain Inspection. Recently a substantial cut was made in the Federal Grain Inspection Service (FGIS) and the financing of grain inspection services by user fees was increased. The Washington staff of the FGIS was reduced by 77 people, the field office staff was cut by 262 people and five regional offices were closed. The issue paper I examined indicated that these reductions were made partly because of an "industry perception that the FGIS was overstaffed, unresponsive, costly and that it conducted programs beyond the intent of its legislative authority." I could not determine from the issue paper whether the "industry perception" regarding the FGIS accurately reflected the actual performance of the organization. One hopes that appropriate benefit-cost calculations were made before the FGIS was cut since, as Mr. Ford knows, the USDA's grain inspection activities were expanded just a few years ago to deal with some very substantial problems.

Agricultural Marketing Service (AMS) Regulations. The issue paper that I received from Mr. Ford regarding the AMS indicates that the Agency attaches importance to regulations that improve the quality, accessibility and timeliness of market information used by private decision makers. This in my opinion is a highly defensible priority.

The AMS issue paper also contains a key sentence which says "...agricultural regulations can be categorized according to whether they correct economic inefficiencies or address inequities in the distribution of rewards." Clearly many agricultural regulations were designed originally to do one or both of these things. Marketing orders, for example, were designed to do both. Moreover, the price discrimination provisions of certain marketing orders can be regarded as mechanisms which "address inequities in the distribution of rewards" by increasing producer incomes. Now emerges a dilemma: How does one justify such dual-purpose regulations when there are no longer many inequities in the distribution of rewards to correct? Can such regulations be justified by their contribution to efficiency alone?

When I ask these questions I imply of course that commercial farmers who sell products under marketing orders are no longer an economically disadvantaged group. I conclude this from Bruce Gardner's findings. Gardner reported that "Commercial farmers and their families are not an economically deprived group. Their combined farm and off-farm incomes average more than twice the amount of the average income per family in the United States (2, p. 7)."1/

I am pleased that Mr. Ford could share with us information on the latest USDA initiatives regarding Federal marketing orders for fruits and vegetables. The transmittal of the report of the study team to the Vice President, the identification of certain problem provisions in the fruit and vegetable orders, and the announced plan to develop new policies for administering the orders represent important first steps. We look forward to additional initiatives by the USDA in this important area. It may be useful to consider the implications of the dilemma described above as the subsequent initiatives are undertaken.

1/ The context suggests that Gardner regards commercial farmers as those with sales of \$40,000 or more per year.

Implications of Deregulatory Initiatives

I will raise a few questions and make a concluding observation on deregulation of agriculture in my remaining comments.

As our speakers suggested, regulations affecting agriculture are receiving additional scrutiny under the President's Regulatory Reform Program. For example, the Office of Management and Budget (OMB) in implementing the President's Executive Order on Regulatory Reform, has said that major regulations proposed by government agencies should be accompanied by a regulatory impact analysis which shows that (1):

- o There is adequate information concerning the need for and consequences of the proposed action.
- o The potential benefits to society from a proposed regulation outweigh the potential costs.
- o Of all the alternative approaches to the given regulatory objective, the proposed action will maximize net benefits to society.

I believe that the criteria in the OMB directive provide a useful way to view proposed regulations. These criteria doubtless will produce fewer and better quality regulations. But how does one operationalize the criteria when dealing with complex regulations of the type described by Mr. Meekhof and Mr. Ford.

There are ways to make a "first cut" identification of regulations that are most likely to satisfy the criteria. A regulation is most likely to meet the criteria if there are "externalities" and "public goods" involved. When externalities exist, costs are imposed by market outcomes upon persons who are not directly involved. "Public goods" are products or services that can be cheaply appropriated by many. Private, profit seeking firms often have little incentive to produce items possessing the characteristics of a "public good."

Thus, EPA regulation of environmental damage from feedlots and pesticides might be justified because of externalities. Fruit and vegetable marketing orders might generate high quality statistics that are "public goods." Labelling regulations for food products also might provide useful "public goods." However, economic regulations are multi-faceted. Thus, a marketing order may provide information which is a

"public good" but also restrict supplies, which may be an economic "bad". Also, a labelling requirement may provide information which is a "public good" while discouraging use of new technology, as was apparently the case with the labelling requirements for mechanically deboned meat.

How does one deal with the problems created by the multi-faceted character of regulations? Will it be necessary to rely almost exclusively on judgements based on unquantifiable considerations to determine whether a regulation produces net benefits for society? Are there ways that costs and benefits for complex regulations affecting agriculture can be quantified? I hope that Mr. Ford and Mr. Meekhof will comment further on these complex questions.

Gardner (2, p. 129) observes that de-regulation of farm commodity markets will be strongly resisted by producers. He reports that this is partly because producers discount the chances that private-market institutions would assume some of the risk-mangement services that are now being provided by government. Thus, he argues, it is important for the government to avoid overregulating the institutional innovations that are presently occurring in forward pricing, contracting, insurance, risk-sharing, and marketing of farm products and that the ban on trading in commodity options should be relaxed.

Gardner's comments raise broader issues. First, his comments suggest that it is more feasible to avoid putting bad new regulations into effect than to eliminate regulations which have undesirable characteristics. This has obvious implications for regulatory policy. Second, it is important to avoid regulations that interfere with the ability of producers to deal with the important new risks they face because of their closer association with the nonfarm economy. These points can hardly be overemphasized.

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Kenneth E. Howland, Deputy Director for Marketing

Tobacco, Cotton & Seeds Division, FAS/USDA

1982 Agricultural Outlook Conference, Session 29

For release: Wednesday November 4, 1981



The world outlook for tobacco in 1982 indicates continued steady growth in consumption, a moderate expansion in trade and a further reduction in stocks held by manufacturers in major consuming countries. In short, it appears reasonable to expect the long term trends to continue next year.

Output of cigarettes - the main product consumed - is expected to grow at an overall rate of about 2 percent, with the rate of increase in the more advanced developing countries of Asia and Latin America exceeding this pace. Cigarette consumption in many of the developed countries may show little growth; most of any increases in their output will be for export to developing countries.

Actual leaf usage is expected to increase by less than 2 percent, as cigarettes gain in popularity relative to other products and cigarette manufacturing efficiencies continue to improve worldwide.

World leaf supplies entering 1982 are expected to be in fairly close balance with anticipated requirements. Estimated beginning stocks of 5.7 million tons (dry weight) - the lowest level in several years - would equal about 110 percent of anticipated usings. Leaf production in 1982 will have to be maintained at least at the 1981 level if a sharper than expected drawdown in stocks is to be avoided.

Although the overall supply of tobacco of all types and qualities may be adequate, shortages of high quality cigarette leaf - especially of burley - may persist as blended cigarettes continue to gain in popularity relative to other types.

World exports of unmanufactured tobacco are expected to increase only slightly from the 1981 estimated level of about 1.3 million tons, as continuing high interest rates and cost pressures encourage manufacturers to draw down leaf inventories and reduce tobacco content per cigarette.

During the past 10 years world leaf production increased at an average rate of a little over 1 percent; consumption grew by nearly 2 percent and leaf exports expanded on average by about 3 percent per year. Within this framework of overall stable growth, developing countries have gained larger shares of production, exports, and consumption relative to the shares held by the developed and centrally-planned countries.

For example, developing countries which produced 40 percent of the world tobacco crop in 1970, produced 46 percent last year. Their share of consumption grew from 30 percent to 33 percent and their share of exports rose from 47 percent to 57 percent of the world total during the 1970 through 1980 period.

This shift in shares has been largely at the expense of the developed countries, whose leaf production and consumption have shown little growth and whose exports have grown at less than half of the rate of the developing countries.

The United States, the leading producer and exporter among the developed countries, has absorbed a large part of the adjustment in production and exports during the past decade. For example, the U.S. share of flue-cured production fell from 31 percent in 1970 to 23 percent in 1980, while the US share of flue-cured exports dropped from 45 percent to 29 percent of the world total.

On the products side, world cigarette output increased at a rate of 3 percent per year during the 1970-80 period, but this rate has slipped to less than 2 percent in each of the past five years. Output in the developing countries has grown at twice the world rate.

Cigarette exports, on the other hand, have more than doubled since 1970 and because modern cigarette manufacturing is highly capital intensive, exports remain largely the domain of the developed countries. Six nations - the United States, West Germany, the United Kingdom, Netherlands, Switzerland and Bulgaria - together export over one-fifth of their production and consistently account for more than eight-tenths of world cigarette exports. This pattern should hold in 1982.

The outlook for US tobacco trade next year is for a gain in exports over 1981. The size and improved quality of this year's flue-cured and burley crops could boost leaf exports to around 270 thousand tons. Export prices could be up 8 to 10 percent, pushing export value to around \$1.6 billion. However, the strength of the dollar, stagnating consumption in Western Europe and Japan and the high cost of holding inventories will continue to affect demand for U.S. leaf in these traditional markets. At the same time, competition from lower cost producers, such as Brazil and Zimbabwe, will continue to chip away at U.S. market shares.

Product exports - largely cigarettes - will continue to gain. Export value in 1982 could top \$1.5 billion.

U.S. imports of leaf and scrap will edge upward as domestic leaf prices rise in line with the price support formula. Imports next year could be around 180 thousand tons. Imported leaf and products are rising in price at a rate of about 18 percent. The total value of imports in 1982 could be nearly \$700 million.

In sum, tobacco's net contribution to the US balance of trade in 1982 may be about \$2.4 billion.

Tobacco remains one of the more closely controlled commodities world-wide. There is a high degree of government involvement in production and pricing in most major producing countries and commercial contracting is followed in others. Cigarette manufacturing is in the hands of state monopolies and a few multi-national companies. However, no major changes in foreign production, marketing and trade policies are expected to be made next year. The European Community and Japan are trying to discourage production of surplus varieties by adjusting prices and paying diversion incentives and quality bonuses. Zimbabwe last year sharply reduced its production and stocks and is expected to continue to try to keep its supplies in line with anticipated demand. The Government of Turkey has been adjusting grower prices and providing export incentives in an effort to work-off surplus stocks of oriental tobacco which have persisted since the mid-1970's. Other countries, for example Malawi, are shifting production toward varieties in strongest demand.

Production shortfalls in centrally-planned countries the past two years have restricted supplies, particularly in the People's Republic of China and to some extent in the Soviet Union. The Soviet Union is normally a major importer of leaf and cigarettes. China entered the world market for substantial imports during the past two years. Presumably, planners in these countries will take steps to try to expand production and improve utilization, but shortages in the socialist countries could be a factor in the market again next year.

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1982 Agricultural Outlook Conference, Session #29
Washington, D.C.



For Release: Wednesday, November 4, 1981

The U.S. tobacco outlook for 1982 is developing in an environment of budget cutting and deregulation at the Federal level that has brought the tobacco price support and loan program under serious question for the first time since it was established in 1938. Although this time around, the Senate and House amendments to significantly change or even eliminate the tobacco program were defeated, the message was clear that virtually all features of the program will be reviewed and subject to legislative change later on.

This year's tobacco crop exceeds prospective use and quality is the best since 1978. Supplies are above a year ago; however, loan holdings have been considerably reduced. The size of the 1982 crop depends in part on USDA's decisions on quotas, which are due to be made by December 1, for flue-cured and by February 1, for burley and other kinds. Effective quotas are likely to drop below the 1981 amounts primarily because of reduced quota carryover. So, the prospect is for a reduced crop next year; with higher prices the crop value may not change much from 1981.

Trade Continues Upward

U.S. cigarette output should reach a record high 726 billion pieces this year, about 12 billion above 1980. Production of cigarettes, which accounts for about 85 percent of tobacco leaf usage, has been increasing since the late 1960's at about two percent annually. Cigarette consumption continues to shift toward low-tar brands. More cigarettes are smoked as the smoking age population increases, while consumption per person, 18 years and over apparently stabilized in 1981 at around 192 packs or 3,850 cigarettes. Low tar cigarettes (15 milligrams of tar or less) have now reached two-thirds of total sales. Slow growth in overall economic activity is expected in 1982, but it will have a negligible impact on cigarette sales and trends.

Antismoking publicity and legislation continue to affect the industry. About three-fourths of the States and many cities and counties have laws that either prohibit smoking in certain places or segregate smokers from nonsmokers. The U.S. Department of Health and Human Services and voluntary health agencies continue efforts to discourage smoking. The cumulative effect on total smoking is uncertain, although it may account for some of the softness in per capita consumption the past several years.

Wholesale cigarette prices, wholesale-retail margins, and retail prices rose in 1981. Rises in wholesale prices in April and September, and rising retail margins have meant a 7- or 8-percent increase in retail cigarette prices for this year.

Six States raised excise taxes in 1981. Tax levies vary from 2 cents per pack in North Carolina to 21 cents in Connecticut, Massachusetts, and Florida. The combined city and State tax is 27 cents in Chicago, Ill., the highest of any locality. As an offset to further budget cuts, the Administration is giving consideration to doubling certain excise taxes. The Federal cigarette tax has been 8 cents for a pack of 20 since 1951.

Cigar and smoking tobacco consumption may break their downward trend this year. Consumption of large cigars in 1981 at 4 billion, will be about the same as 1980. Small cigar consumption may also stabilize around the 1980 total of 1.44 billion. Use of smoking tobacco in 1981 remains close to the 37 million pounds of last year.

Smokeless tobacco output is on a plateau due to a slowdown in employment in certain industries such as construction where employees use sizable amounts of chewing tobacco and snuff. Chewing tobacco output in 1981 slightly exceeds last year's 106 million pounds.

Growers Produce Bumper Crop

Tobacco production this year is up about an eighth from 1980 because of increased acreage and yields. Better growing conditions improved leaf quality. Because of stronger demand, flue-cured prices are averaging well above last season. Cash receipts from the 1981 crop will likely rise substantially and set a record.

As of October 1, the crop was forecast at 2.01 billion pounds, up 13 percent from last year. Support levels are 12 percent higher so prices will set another record. Crop sales of \$3.25 billion would be 25 percent higher than 1980's. Tobacco production costs were up about 10 percent from 1980.

The larger 1981 crop plus the increased carryover means total supplies for the 1981/82 marketing year are up about 5 percent from last year. When burley markets open later this month, prices are expected to be at an alltime high, averaging above the 1980 record of \$1.66 per pound.

At the beginning of the 1981/82 marketing year, unsold tobacco held under Government loan totaled 435 million pounds (farm sales weight), about 105 million below a year earlier. The reduction was in flue-cured due to large sales of older crops. A decrease in leaf going under loan from this season's flue-cured crop has further helped to balance the inventory among various grades. The high prices of loan stocks preclude sales of any significant quantities in the export market, so these stocks may pose a potential dilemma.

Government price support is mandatory for tobacco produced under marketing quotas. The legal formula requires that price support levels for eligible tobaccos go up about 11 percent next year over 1981. The increase results from a rise in the parity index--which is the measure of changes in prices paid by farmers, including wages paid to hired labor, interest, and taxes.

This year's large crop for flue-cured tobacco plus the larger carryover means about a 3 percent larger supply in 1981/82 over last year. The flue-cured quota had been reduced by 7.5 percent this year. Despite reduced acreage,

yields are the highest since 1964. So growers are producing about 4 percent more tobacco than in 1980.

The 1981 flue-cured auction season has virtually ended with a record average price of \$1.67 per pound, 22 cents above a year ago. Grade prices were higher, and with more favorable weather, quality was well above the 1980 season.

USDA is required to announce the national marketing quota for flue-cured tobacco by December 1, 1981. The 1981 quota was 1,013 million pounds, or about 5 percent below the prospective use. Still, current supplies equal almost 3 years' use, compared with the desired supply of 2.4 years, as provided for in the legislative formula. Since this season's marketings were close to 1981's effective quota, the effective quota for 1982 won't change much from the basic quota. Very likely, the resulting effective quota may be the lowest in the 16 years of acreage poundage quotas.

The 1981/82 supply of burley tobacco is 9 percent above last season. Carryover on October 1, was 2 percent below a year ago. This year's crop is the largest since 1963, 28 percent above last season. Acreage was up 18 percent and yields up 9 percent. USDA regulations allow all of the crop to be sold in bales, but a major share will probably still be sold in the traditional manner. Due to short supplies, both domestic use and exports were lower in 1980/81. Carryover stocks next October 1, should rise to a more adequate amount.

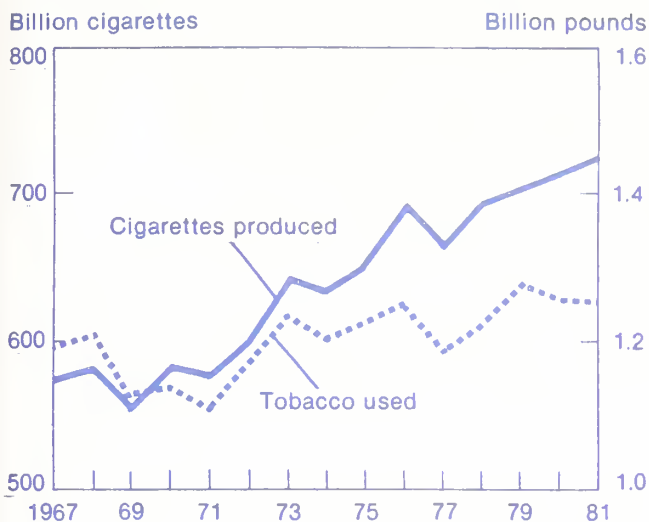
Legislation relating to burley tobacco requires that the national quota be at least 95 percent of estimated disappearance for that year. With disappearance close to the 625-million-pound average for the 3 years 1977-79 (when supplies were not limiting) and 1981/82 supply barely adequate, the 1982 marketing quota may remain around this season's 660 million pounds. The 1982 farm quotas will be increased by any production shortfall from this year's quota. Quota carryover from 1981 undermarketings is expected to be considerably less than the large carryover the past two seasons so the 1982 effective quota may decline sharply.

Among other tobaccos, supplies of Southern Maryland, dark air-cured, and cigar tobaccos are larger than last season, while fire-cured supplies are about the same. One-third of the Maryland (type 32) tobacco, a nonquota kind, was produced in the flue-cured belt this season (outside the traditional Maryland belt). Legislation passed by the House of Representatives would essentially prohibit Maryland tobacco in the burley and flue-cured regions.

Tobacco Program Prospects

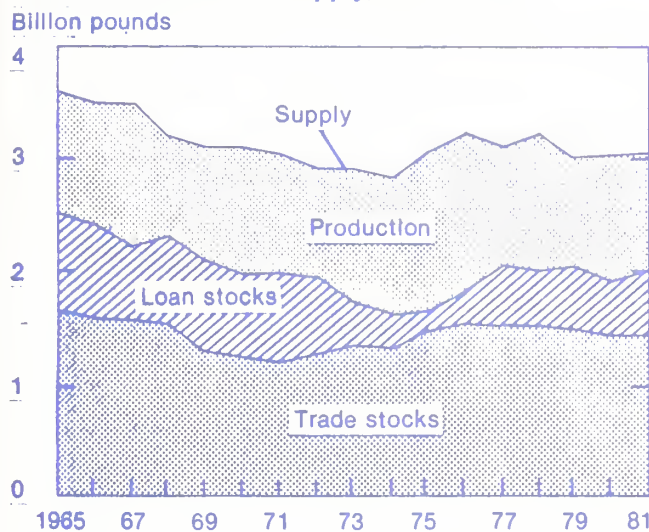
The tobacco price support and allotment program survived challenges in the House and Senate during the recent consideration of the 1981 farm bill, but the USDA has been mandated to develop an acceptable no-cost alternative within current provisions. The ability to accomplish the mandate could be a factor affecting the future legislative adjustments for the tobacco support program. Despite their relatively low cost to the Federal Government, provisions such as marketing quotas, high support prices, and allotment ownership by nonfarmers have been sharply criticized.

Cigarettes Produced and Tobacco Used



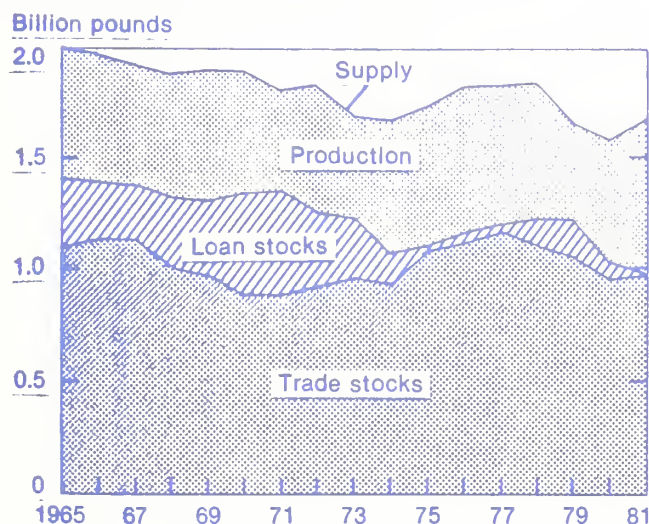
Billion pounds in unstemmed processing weight. 1981 forecast.

Flue-Cured Tobacco: Supply, Price, Use



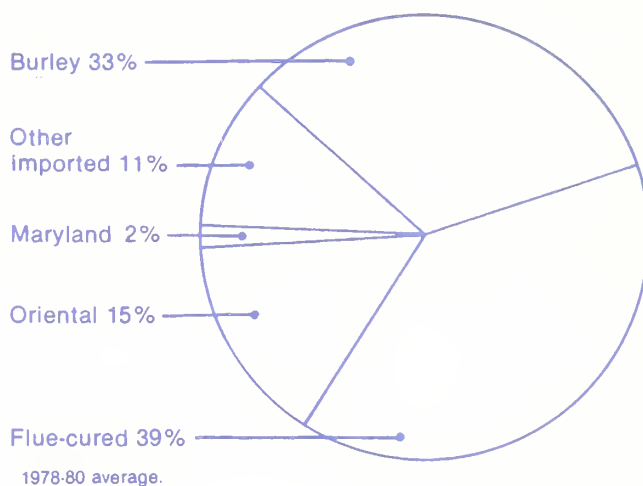
Trade stocks include manufacturers' and dealers'. Crop year beginning July 1. 1980 preliminary, 1981 forecast.

Burley Tobacco: Supply, Price, Use

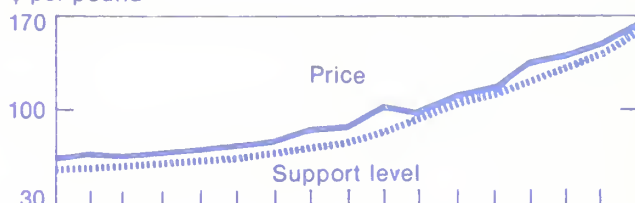


Trade stocks include manufacturers' and dealers'. Crop year beginning October 1. 1980 preliminary, 1981 forecast.

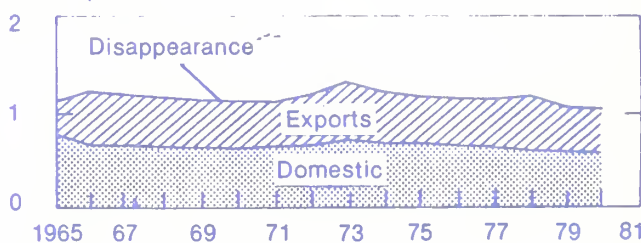
Tobacco Use in Cigarettes



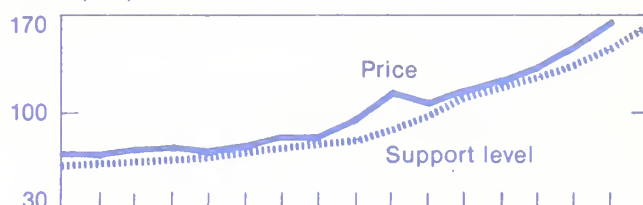
¢ per pound



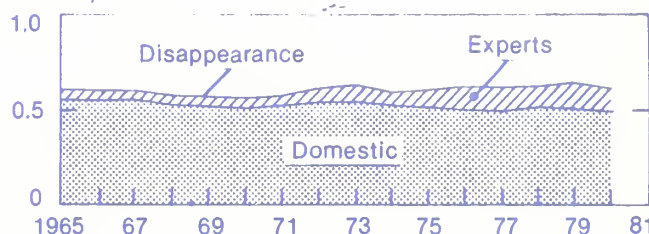
Billion pounds



Cents per pound



Billion pounds



Anson R. Bertrand, Director, Science and Education, USDA

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I can perhaps best describe the outlook for agricultural production by putting it in topographical terms. We are standing on a high plateau which we achieved 10 years ago, after 20 years of vigorous climbing. Ahead lie mountains twice as high as the lofty plateau on which we now stand. Today's outlook is not for this coming year or even for the next five--it is for putting agricultural production on the peaks of those mountains 20 years from now. We need to start climbing again, and to do that, we need to get into shape. Successful mountain climbing requires good basic health and the right supplies.

Let me translate this image into agricultural reality. In the decades from 1950 to 1970, U.S. agricultural productivity climbed at a rate of 1.9 percent per year. In the '70's it leveled out at 1.3 percent. That's our lofty plateau--and it is lofty. Food and agriculture comprise the Nation's largest industry. It accounts for 20 percent of our GNP and provides employment for 20 percent of our civilian work force. American farmers today supply 60 percent of the grain and 75 percent of the soybeans in world trade. Last fiscal year they produced a trade surplus of about \$27 billion.

The mountains that lie ahead are simply this: In the year 2020--40 years from now--it is projected that worldwide there will be 8 billion people to feed. This is almost a 100 percent increase over the current population of 4.6 billion. The vigor we're going to need for the climb depends to a large degree on our soil, water, and genetic resources, and our basic knowledge of biological processes.

For sustained strength we will need a highly trained community of agricultural scientists and technology transfer specialists.

The supplies we're going to need are fuel, fertilizer, machinery, germplasm, vaccines, plant and animal management systems, marketing and communications systems and much more.

Daily events tend to mask the somber realities underlying the task ahead. We see that farmers comprise only 3 percent of our population and yet feed this nation with abundance, and provide 70 percent of the food aid to food-deficient countries. We read daily news items about this year's record-breaking wheat and corn crops and increases in other commodities that overwhelm our already bulging storage facilities. More land is irrigated each year. The rate of growth in U.S. population growth rate is leveling off.

So we may well ask: Where's the problem? Why more research? Production seems to be outdoing itself as it is.

Let me outline some principal elements of the problem:

- o Three million acres of farmland are lost to nonfarm purposes each year. One million acres of that is prime farmland.
- o Around 2 billion tons of soil are lost yearly to erosion from surface runoff on cropland.
- o Most new cropland to help meet future demands for food and fiber will have to come from land now in pasture or forest, creating a significant loss in forage and wood-production and, in some places, wildlife habitat. Most of these soils have limitations requiring treatment before being converted to crops.
- o Irrigated agriculture uses more than 80 percent of the water consumed in this nation. About 40 percent of our irrigation draws on ground water. In many areas ground water is being used faster than it is being replenished. In other areas it is simply not replenishable.
- o In nearly every water resource region, the river basins are polluted by sediment. Erosion from cropland contributes nearly half the total sediment. Other sources are mining, construction, and commercial forestry.
- o The majority of river basins are polluted by dissolved solids, such as salts, excess nutrients, bacteria, and pesticides.^{1/}

In short, soil and water shortages may well surpass energy as crisis issues before the end of the century, in this country and around the world.

There is still another natural resource whose health we must be concerned about. The vast Federal-State science and education network comprises scientists at Federal research laboratories, State agricultural experiment stations, and Extension professionals, program aides, and volunteers in Extension offices in virtually every county in the country. These scientists and specialists are the source of the knowledge and the vital technology transfer links from which future progress will come.

The source of supply of these professionals is largely the agricultural colleges both inside and outside the land-grant university system. This educational network is unparalleled in the world for training people for careers in agriculture. But similar to other natural resources, the Federal-State research and education network is losing professionals faster than the universities can supply them. Jobs in related fields in private industry are drawing many people away. Not enough students are choosing to enter the agricultural disciplines.

Finding a solution to this problem is as fundamental to our future well-being as conserving our soil and water resources. The pace of agricultural research and implementation must be quickened, and this will increase the demand for excellent scientists in the appropriate disciplines.

^{1/} America's Soil and Water: Condition and Trends, Soil Conservation Service, December 1980.

The lag time between development of a new technology and its adoption by farmers must be shortened. More communications professionals will be needed to tailor computer and telecommunications to the increased pace of technology transfer that must be attained.

It is our responsibility, therefore, to make certain that our most promising young people have the opportunity to obtain the best possible preparation for careers in agricultural research and education that are vital to a healthy society.^{2/}

This is not another doom and gloom speech! My outlook is optimistic, and the key to my optimism is the word renewable. Our research and education network is certainly a renewable resource, and this concept sets the direction of agricultural research for the rest of the 80's--namely, we must find ways to continually replenish our renewable resources. And we must pursue ways to conserve, manage, and explore alternatives to our nonrenewable resources.

This is why we may disagree with those who say we have reached the limits of technology and resources management. We have not. In today's harvests we are reaping the scientific and technological advances of the 1930's and '40's--advances based on the assumptions of cheap and unlimited land, water, fuel, and other resources. From this established position we are striking off in a new direction. Far from achieving scientific or biological limits, the world has only just begun to explore the capabilities for increasing food production.

The record-breaking yields we need for the future will be based on wider application of current knowledge, and on new scientific breakthroughs rather than on ever-expanding acreage. As I describe some of the basic and applied research areas targeted for increased effort in USDA's science and education agencies, I think you will see how much there is to be done. But remember how many opportunities that gives us for new solutions--some perhaps not even dreamed of yet.

Little is known about how conservation practices like no-till and modern crop rotations affect basic soil properties, or what the relationship is between plant growth and resulting soil characteristics.

We have inadequate knowledge of how raindrops, waterflow, and wind detach and transport soil particles under specific conditions. Neither do we know enough about which physical, mineralogical, chemical, and biological soil properties are critical in the erosion process.

Results from continuing and new research initiatives on these subjects will enable us to develop the best management practices for controlling erosion on every soil type nationwide. Our goal is to farm in such a manner that erosion does not exceed the rate at which new soil is formed.

^{2/} Comments of Derek C. Bok, President of Harvard University, Science, Vol. 213, No. 4511, pp. 980-982. August 28, 1981.

More applied research is therefore being aimed at integrating a wide range of climatic, biological, mechanical, and management practices into systems for farm use. These systems must meet the basic objective of profitable and stable crop production along with conservation of soil and water resources. Such systems would include various combinations of crops and varieties, cropping sequences, conservation tillage, land forming, wind barriers, terraces, strip cropping, contouring, fertilizer use, pest control, and irrigation water management.

More specifically for irrigation, technology is being refined to determine exactly when a crop needs to be irrigated, and how little water can be applied and still produce good yields year in and year out. Different techniques of irrigation--such as trickle irrigation and a surface gravity system called cable-gation--not only conserve water but also reduce the energy needed for water pressure. Research is ongoing in studying the effects of these techniques and devising new ones.

Recent developments in the plant sciences demonstrate what I mean by saying that from our established position we are striking off in a new direction. Traditional methods of plant breeding are bringing about improvements in yields, nutritional quality, pest resistance, and tolerance of environmental stress from drought, heat, pollution, soil salinity, and acidity at a steady pace.

Concurrently, the astounding potential of genetic engineering has been demonstrated in recent research breakthroughs. In fact, genetic engineering has been called one of the four major scientific revolutions of this century--on a par with unlocking the atom, escaping earth's gravity, and the computer revolution.^{3/}

The techniques recently developed in transferring genetic material from one kind of plant to another are the first steps leading to practical methods for introducing selected genes for specific purposes into certain crops. One area in particular where genetic engineering could revolutionize our agriculture would be in developing nitrogen-fixing capability in nonleguminous crops.

Chemically fixed nitrogen is the most costly fossil-fuel-dependent industrial input into agricultural productivity. Up to 35 percent of the total productive capacity of all crops is now accredited to this single input. Almost one-third of all fossil fuel now used in agricultural production goes to chemical nitrogen fertilizer synthesis. The U.S. annually consumes about one-fourth of the world's supply of nitrogen fertilizer, half of which goes into a single crop--corn. Although it is probably some years off, just think of the impact--on fuel supplies and economics worldwide--if we could grow corn capable of fixing its own nitrogen from the air.

^{3/} Summary of the meeting of the Genetic Engineering Panel, American Association for the Advancement of Science, February 20, 1981.

Research in cell culture techniques and molecular biology is also producing critical new knowledge which will greatly facilitate our ability to improve the yield and nutritive value of plants--and even to change the composition and properties of plants. Standard plant breeding techniques have and will continue to give us super strains of rice, wheat, maize, sorghum, millet, some legumes, grasses, and many new fruits and vegetables.

Crops that must be vegetatively propagated, however, have been difficult to improve. Cell and tissue culture techniques are making it possible to preserve the genetic stocks of such food crops as potatoes, sweet potatoes, cassava, and tree fruits. The genes for desirable traits may then be spliced into these plant materials. Researchers are now perfecting techniques for regrowing whole plants from these genetically improved cell and tissue cultures. One successful breakthrough--altering food crops for greater adaptability to infertile, acidic, or salty growing conditions--would permit cultivation of low-quality soils, and have a significant impact on increasing food production worldwide.

Research on photosynthesis also holds exciting promise. Theoretically, plants can use up to 12 percent of the energy from the sun available to them. Yet in even the best farm operations in the world, crops use less than 1 percent. Research is continuing on many crops to improve photosynthetic efficiency. Scientists working on peanuts are optimistic that they may soon have a breakthrough that could triple yields.

Just as the benefits of agricultural research of the '30's and 40's blossomed in the decades between 1950 and 1980, the advances made possible through genetic engineering will most likely be felt nearer the year 2000. In the next decade, however, another revolution could be brought about by the development of plant growth regulators.

Research is underway to identify the chemical substances within plants that regulate their stages of growth. These could then be synthesized and applied to crops to achieve a whole range of desirable effects. For example, the aging process in soybeans could be slowed so that the pods could develop more fully. A bioregulator could also direct soybean plants to send the energy from photosynthesis into producing seed instead of leaves.

Other bioregulators could direct the plant to produce better quality oil, carbohydrates, and protein. Seedlings could be directed to speed up maturation so they would be less attractive to insects as a food source and better able to withstand insect attack.

Application of bioregulators holds great promise for helping crops survive under environmental stress. A bioregulator could slow the transpiration rate of crops in drought conditions, thereby increasing water retention and minimizing damage. Bioregulators are already being used in the fruit industry to promote uniform fruiting and retard the ripening process that leads to decay in storage. The possibilities in the use of bioregulators are tremendous--and within reach.

Well over one-third of U.S. nonfederal land is pastureland, native pasture, and rangeland. The majority of these lands are not suitable for conversion to crops. Ruminant animals are the means by which we harvest this vast food source--otherwise unavailable to us--and convert it to milk and meat. They are also efficient recyclers of byproducts that would otherwise go to waste. This is the impetus behind striving for efficiency in animal production.

Some of the recent advances in animal genetics--embryo transfer, improved estrus detection and conception rates in cows, and synchronized farrowing in hogs--may well be known to you. But there are other areas--particularly in disease prevention and control--where exciting research breakthroughs may soon produce tremendous benefits. Genetic selection for disease resistance is already being practiced, and it is expected to eliminate the need for many drugs and vaccines. New techniques in determining specific genetic resistance to disease will soon make it possible to test and select a fertilized egg for transplanting and producing a disease-resistant animal.

In the interim, the recent breakthrough in using DNA technology to produce a safe and effective vaccine against foot-and-mouth disease is the first in what promises to be a whole series of breakthroughs in reducing animal losses from disease.

The health of our soil and water resources affects animal agriculture as much as it does crop production. Poorly managed rangeland is responsible for a loss of 6 to 8 million pounds of red meat and a significant amount of wool, mohair, leather, and animal byproducts every year. Many rangeland soils are more fragile than cropland and quickly erode when misused, contributing to stream and river pollution. The new emphasis on farmland management systems to control erosion will benefit rangeland quality, which in turn will be expressed in reduced product losses, reduced soil erosion, and reduced water pollution. This is just one example of how the integrated approach required in renewable resources research can greatly benefit each part of the whole picture.

The integrated approach is also crucial in the high-priority area of pest control, which will become increasingly important as farmers implement conservation tillage systems.

Plant scientists are studying what makes crops vulnerable to insects, diseases, and herbicides used on nearby weeds in an effort to reduce that vulnerability through plant breeding or genetic engineering.

Entomologists are studying insect behavior and lifecycles to find new approaches to control. More research is being focused on natural enemies of pests and how we might assist them. Biologically active chemicals derived from the pests themselves are opening up a whole new world of behavior manipulations that will greatly improve our ability to control pests with minimum side effects.

More needs to be known about the effects of cultivation methods on the lifecycle of weeds, insects, and pathogens. That information can then be incorporated into the farm management practices I have already mentioned.

Bioscientists and physioscientists are developing new methods for maintaining quality, preventing loss, and improving the efficiency of processing, storage, and distribution systems for food and farm products. If we could cut losses in marketing channels by 50 percent, we could increase our food supply by 10 to 15 percent.

Similarly with plants and animals, productivity could be significantly increased simply by cutting the losses we now suffer because of diseases, insects, and other threats. The contributions that research can make on this important frontier are enormous.

These are some of the more important high-priority items that we believe will have the greatest impact on meeting the Nation's and the world's increasing food and fiber needs.

In the 1960's we were so bold as to call the effects of new plant varieties, irrigation technology, and chemical fertilizers and pesticides the "Green Revolution." Although the potential of genetic engineering is indeed tremendous, the new era of agricultural research is more than a "gene revolution." Perhaps we should call it the "Bioresearch Revolution."

Secretary Block's high-priority goals of improving agricultural productivity and marketing, and conserving the Nation's soil and water resources recognize the fundamental contribution of science and education to progress in these areas. We are setting priorities for our resources--both dollars and people, scientists and educators--more clearly than ever before. We seek to foster a climate where innovations of the "Bioresearch Revolution" can flourish.

Given these efforts, my outlook for the future of science and education--and the future of this country--is optimistic. To make gloomy forecasts based solely on what we know today is to confine our vision unnecessarily. There exist resources we haven't even thought of yet. I know of no better example than genetic engineering. The knowledge of this tremendous resource and what we may be able to do with it appeared only a millisecond ago in the calendar of human history. It will certainly not be the last such discovery.

The revolutionary nature of the new agricultural era is maybe best expressed by paraphrasing something Victor Hugo said--

If you would understand what Revolution is--call it Progress;
and if you would understand what Progress is--call it Tomorrow.

The research efforts we are pursuing today were chosen specifically for that tomorrow. We are on the way.

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Modern agricultural research is a rather recent development. It has acquired special institutional organization in which governments, private industry and universities are much involved. We have learned much about the economics of public agricultural research in the United States during the past two decades. We know it contributes greatly to increases in agricultural productivity. We also know its contribution to productivity is part of the larger contribution of an integrated system of teaching, extension services, applied research and basic research. The evidence indicates that basic research improves the productivity of applied research (and vice-versa), and that applied research improves the productivity of extension and the general schooling activity of farmers [1, 2].

We know that the rates of return on the research investment are in general decidedly favorable, that it is a worthwhile activity (Table 1). These rates of return also give us the implicit price of the research. We know that under competition the reductions in real costs of producing agricultural products realized as a consequence of research are transferred in large measure to consumers. We know also that both benefits and costs of agricultural research investments tend to redistribute income from higher to lower income families (Table 2).

Even where farmers are the main beneficiaries, we know it is beyond the capacity of the individual farmer to do the required research on his own. Nor are farmers collectively able to organize and finance national agricultural research. Although over time most of the benefits from agricultural research accrue to consumers, we know it is not feasible for them to organize and finance such research nationally. Thus, we know that the only meaningful approach to modern agricultural research is to view most of its contributions as public goods. As such, they are made freely available to all, and they must be paid for on public account [3, p. 43].

With all the evidence about its large and positive contributions to productivity, why is it that governments continue to underinvest in agricultural research? And, why is it that government officials continue to press for more centralized control and organization of the research? These questions rank high in the minds of agricultural research administrators.

One reason for the undervaluation of agricultural research is externalities or spillover effects. Research paid for by one state increases productivity in other states too. Such spillover benefits to farmers in other states are generally not accounted for by those who do not pay for the research [1, 2, 4, 5]. The division of the benefits from productivity growth

between producers of one state and producers in other states has been important in weakening the support for agricultural research by farmers. Farmer's support for agricultural research has also been weakened by the division of the benefits from productivity growth between producers and consumers. Where demand is inelastic or growing slowly, as in the United States during most of the last 50 years, a large share of the gains from innovation are passed on to consumers in the form of lower commodity prices (Figure 1). However, these benefits to consumers are partitioned into such small amounts that the individual consumer cannot feel the connection with increased farm productivity realized as a consequence of the research [2]. Thus, agricultural research remains undervalued by consumers as well as by farmers. We know that the Federal allocation of funds for state experiment stations and regional USDA field research locations only partially compensates for these spillovers (Table 3). It is inconsistent that Federal support for agricultural research should decrease, both absolutely and relatively (Table 4), at the same time that interstate flows of producer benefits and consumer benefits are increasing. Yet this is the way it is. Taxpayers in food surplus states are subsidizing consumers in food deficit states and the degree of subsidization is increasing over time.

The second question is linked to the first question, and points to a serious unresolved organizational quandry in supporting the more basic research with public funds. The history of agricultural research in the United States shows that decentralization is hard to maintain. Farmers, as well as consumers, and their representatives must be induced to support investment in science whose benefits are both unknown and remote. Most of such research is done by universities. Many government officials do not understand the essential conditions for a productive, prosperous, dynamic agriculture. Yet, they resist yielding management of Federally supported basic research to state-level administrators. Management models developed for other Federally sponsored research programs are being imposed on agriculture. The current allocation of Federal funds for basic agricultural research and the regulations that follow in their wake seriously impair the ongoing research of scientists. The universities serving agricultural research in this Nation have a rich history of accomplishment. Yet the major unsolved problem is the desire to overorganize and overcontrol their research from the top. Such centralization ignores the evidence that decentralization of agricultural research, even to the outlying substations, is profitable and that basic research must be joined with applied-developmental research for either to be profitable [1, 2].

The organization and control of basic research should provide for maximum flexibility and limited but focused adherence to relevance. A rich nation can ill-afford not to turn its topflight scientists loose. The responsibility for administration and management is to identify persons with capabilities for exploring the unknown, link them with the inventors of new technology, and provide them with adequate support in terms of personnel, equipment, laboratory facilities, or whatever is needed. Current public investments in research are, of course, constrained by available resources. But modern science and agricultural research are worthwhile. They contribute to our stock of knowledge and enter the public domain as valuable public goods that the market cannot afford to produce.

The current evidence pertaining to a modern, dynamic agriculture indicates that we are not about to exhaust the biological potentialities of plants, animals and soils, provided we make the necessary investments to improve the schooling of farm people and to promote agricultural research and dissemination of its contributions. The decisive factor regarding future growth of agriculture will be the abilities of farm people and technological progress. It is not possible to anticipate what new knowledge will be discovered or what farm people will achieve in the decades ahead.

Agricultural technology--that special stock of knowledge pertaining to the transformation of resources into a flow of food commodities and related services--will continue to advance, much as it has during past decades. More institutions are involving themselves in agricultural research--the non-land-grant universities, new agencies of the Federal government, and the international agricultural research network. We are entitled to believe that some of this research will pay off, as has been true of research in the past.

However, it is just as evident that the growth potential of agriculture is not being realized because of underinvestment in the schooling of farm people, in agricultural research and in the dissemination of its results. Farmers are constrained not only by land, equipment, and other factors of production, but also by information about worthwhile technological and economic opportunities. It is essential that some form of leadership for agricultural research be re-established at the Federal and state levels that will lend creditability to a decentralized but well-coordinated public agricultural research system. One thing is certain, if we don't get this issue of organization and control resolved, agricultural research will remain undervalued by society.

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Table 1. Empirical Rate of Return Estimates for Agricultural Research Investment.

Study (date)	Commodity	Time Period	Internal Rate of Return (Percent)
<u>Index Number Approach</u>			
Griliches (1958)	Hybrid Corn	1940-55	35-40
Griliches (1958)	Hybrid Sorghum	1940-57	20
Peterson (1967)	Poultry	1915-60	21-25
Schmitz & Seckler (1970)	Tomato Harvester	1958-67	37-45
			16-25 ^a
Peterson & Fitzharris (1975)	Aggregate (all crops & livestock)	1937-42	50
		1947-57	51
		1957-62	48
		1967-72	34
<u>Regression Analysis Approach</u>			
Griliches (1964)	Aggregate	19-9-59	35-40
Peterson (1966)	Poultry	1915-60	21
Evenson (1968)	Aggregate	1949-59	47
Lu & Cline (1977)	Aggregate	1939-48	30
		1949-59	28
		1959-69	26
		1969-72	21
Knutson (1977)	Aggregate	1939-48	50
		1949-58	47
		1959-68	39
		1969-72	36
White, Havlicek & Otto (1978)	Aggregate	1929-41	36
		1942-57	32
		1958-77	26
Lu & Cline (1978)	Aggregate-Northeast	1939-72	16
	-Appalachian	1939-72	23
	-Southeast	1939-72	15
	-Delta States	1939-72	26
	-Lake States	1939-72	35
	-Corn Belt	1939-72	21
	-Northern Plains	1939-72	23
	-Southern Plains	1939-72	14
	-Mountain	1939-72	22
	-Pacific	1939-72	46
Davis (1979)	Aggregate	1949	100
		1954	78
		1959	66
		1964	57
		1969	51
		1974	51
Bedahl & Peterson (1976)	Cash Grains	1969	36
	Poultry	1969	37
	Dairy	1969	46
	Livestock	1969	47
Norton (1980)	Cash Grains	1974	85
	Poultry	1974	46
	Dairy	1974	51
	Livestock	1974	88
Evenson, Ruttan & Waggoner (1979)	All Agr. Research	1868-1926	65
	Technology-Oriented	1927-50	95
	Science-Oriented	1927-50	110
	Technology-Oriented-South	1948-71	130
	-North	1948-71	93
	-West	1948-71	95
	Science-Oriented	1948-71	45

^aEstimates account for displaced workers.

The estimates were reduced by one-third to correct for omission of private research.

The estimates were reduced by one-fifth to correct for omission of private research.

Estimates are based on cross-sectional data using real output and deflated research.

Estimates are high because extension is omitted and a small adjustment for private research is used. If adjustments were made these rates would be around 20% for 1964-79.

These estimates correspond to the mean lags used by Bedahl and Peterson (1976).

Table 2. Relationship of Costs and Benefits of Agricultural Research to Family Income.

Class	Federal Taxes for		States Taxes for		Total Taxes for		Benefit- Cost ^f / Ratio-
	Average Family ^a / Income-	Average Benefits ^b / per family-	Agricultural Research ^c / per family-	Agricultural Research ^d / per family-	Agricultural Research ^e / per family-	Agricultural Research ^f / per family-	
-----Dollars-----							
Under 5,000	3,981	16.20	.43	.88	1.31		12.37
5,000-8,000	7,922	19.06	1.77	2.05	3.82		4.99
8,000-12,000	10,528	20.63	3.19	2.85	6.04		3.42
12,000-15,000	13,458	22.13	5.29	3.97	9.26		2.39
15,000-20,000	17,371	25.91	8.40	5.59	13.99		1.85
Over 20,000	28,953	30.74	15.78	9.82	25.60		1.20

a/ Source: U.S. Dept. of Commerce, Bureau of the Census, Current Population Reports, Series P-60, No. 101, "Money Income in 1974 of Families and Persons in the U.S.," U.S. Government Printing Office, Washington, D.C., 1976.

b/ Expressed in present value. Total consumer benefits are calculated according to the equation

$$TB_C = 1/2 \times MVP_R \times RE \times D$$

where TB_C is total consumer benefits from ag-food research; MVP_R is marginal value product of research; RE is production oriented research expenditures in 1974 (Budget of the U.S. Government; USDA, Inventory of Agricultural Research; U.S. Dept. of the Treasury); and D is the discount factor over 13 years at 10%.

Total consumer benefits are allocated to income classes according to the level of food expenditures (Gallo, Anthony E. and William T. Boehm, "Food Expenditures by Income Group," National Food Review, NFT-3, USDA, ESCS, Washington, D.C., June 1978). It was conservatively estimated that one-half of the total net benefits accrued to consumers over the thirteen-year time span.

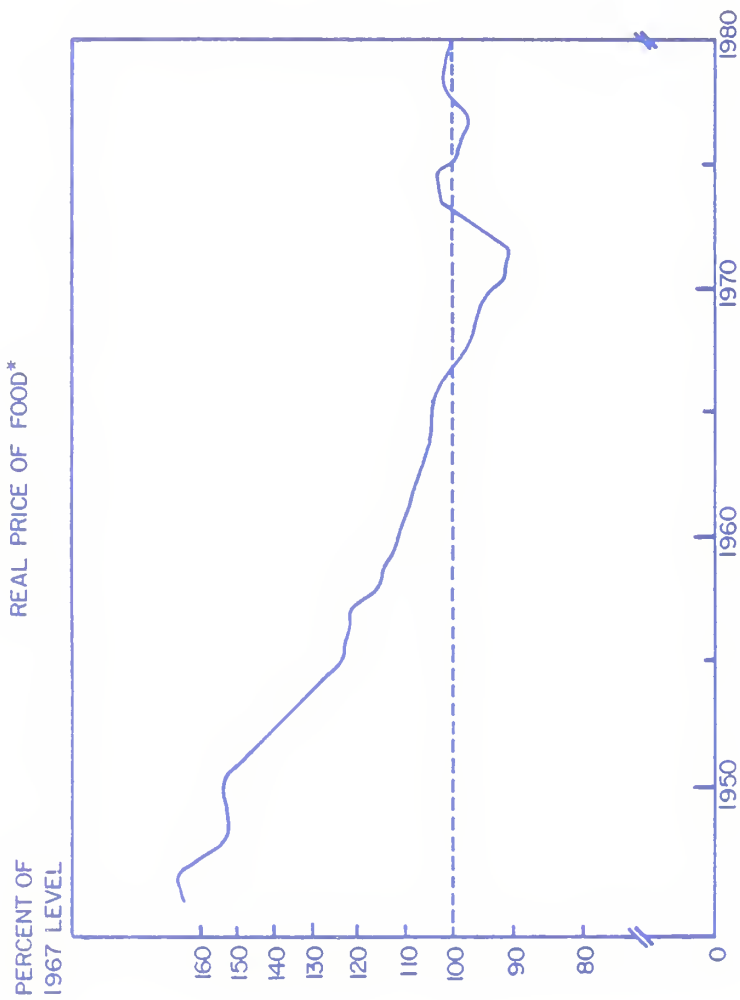
c/ Production-oriented research expenditures for Agricultural Research Service, Economic Research Service and the Federal Government's Share of State Agricultural Experiment Stations are allocated among income groups according to the distribution of Federal personal incomes taxes (U.S. Advisory Commission on Intergovernmental Relations, 1974).

d/ State funded production-oriented agricultural research expenditures are allocated among income groups according to the distribution of state personal income and general sales taxes (U.S. Advisory Commission on Intergovernmental Relations, 1974).

e/ Summation of Federal and State taxes for agricultural research per family.

f/ Average benefits from agricultural research expenditures per family divided by total taxes for agricultural research per family.

FIGURE 1
REAL PRICE OF FOOD*



* Consumer price index for food relative to private non-agricultural hourly earnings, adjusted for overtime and interindustry shifts.

Source : [6]

Table 3. Regional Estimates of External-to-Internal Ratios Related to Benefits and Funding of Production-Oriented Agricultural Research.

Farm Producing Region	Ratio of Spillovers to Regional Benefits	Ratio of Federal-State ^{a/} Expenditures-
Northeast	1.31	0.97
Lake States	2.73	1.10
Corn Belt	2.04	1.25
Northern Plains	1.40	1.63
Appalachian	1.19	1.60
Southeast	1.40	1.37
Delta	2.48	1.80
Southern Plains	2.80	2.10
Mountain	1.60	2.35
Pacific	1.89	0.90
Aggregate	1.73	1.38

^{a/} Includes federal funding of production-oriented agricultural research in each region through CSRS, ARS, ERS, and SCS relative to state expenditures for agricultural research in each region.

Source: [4].

Table 4. Amount and Relative Importance of Research Performed by Funding Sources for State Agricultural Experiment Stations, the 1890 Colleges and Tuskegee, and Forestry Schools and for USDA Agencies, 1967 and 1979.

Performing Entity & Funding Source	1967		1979		Percent
	Amount	Percent	Amount	Constant ^a	
	(\$000,000)	%	(\$000,000)	(\$000,000)	
State Research					
Federal Sources					
Science & Education Admin- istration (USDA) ^b	53.8	12.5	139.0	56.7	11.8
Other Cooperative Grants & Agreements (USDA)	10.3	2.4	19.2	7.9	1.6
Other Federal Agencies	24.1	5.6	57.9	23.6	4.9
	88.2	20.5	216.1	88.2	18.3
State Sources					
Appropriations	118.6	27.6	392.6	160.2	33.2
Sales	13.5	3.1	44.9	18.3	3.8
	132.1	30.7	437.5	178.5	37.0
Other Sources	13.1	3.1	61.4	25.1	5.2
Total State Research	233.4	54.3	715.0	291.8	60.5
Federal Research					
Science & Education Administration	144.7	33.6	318.1 ^c	129.8	26.9
Economics, Statistics & Cooperative Service	14.6	3.4	36.8	15.0	3.1
Forest Service	37.2	8.7	106.7	43.6	9.0
Other	--	--	6.0 ^d	2.5	0.5
Total Federal Research	196.5	45.7	467.6	190.9	39.5
Total State & Federal Research	429.9	100.0	1,182.6	482.7	100.0

^aDeflated by the State/Local GNP Deflator for government purchases of goods and services. The value of this index for 1979 was 245 with a base of 1967=100.

^bIncludes cooperative grants and agreements administered through the USDA Science and Education Administration's Cooperative Research Program (USDA/SEA/CR). In 1979, 7.9 million was received by State Agricultural Experiment Stations under the Competitive Grants Program. The funds received by states differ from funds appropriated by the amount of direct and indirect federal administrative charges.

^cIn 1979, 0.6 million was received by the USDA Science and Education Administration's Agricultural Research Program (USDA/SEA/AR) under the Competitive Grants Program.

^dIncludes funds to Land Grant Colleges not channeled through the State Agricultural Experiment Stations, to other public universities, to private universities and non-profit research institutions, and to private for profit institutions under the Competitive Grants Program.

Source: USDA, CRIS printout.

CHALLENGE: PRODUCTION IN THE 80's--AGRICULTURAL
RESEARCH AND TECHNOLOGY--OTA ASSESSMENT OF THE
RESEARCH SYSTEM

OUTLOOK '82

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The food and agricultural sector has been extremely successful, in part because of sustained public support of research and development. As we face a future of increased demand on our agricultural resources, it is essential that the research system function as effectively as possible. There is, however, congressional concern that the research system is not functioning as well as it could. The concern arises from a number of different but related problems.

It begins with a perception of inadequate planning and vying for research funds by performers of food and agricultural research. The U.S. Department of Agriculture (USDA) seems to develop its own research agenda and the State agricultural experiment stations (SAES) another. They compete with each other for limited Federal funds. In addition, Federal agencies other than USDA have a list of concerns in food and agriculture. The private sector has yet another set of concerns. Any interrelationship among these research participants appears to be more by accident than design. When Congress asks how the efforts will be coordinated and what the respective roles of each performing agency will be in this pluralistic, decentralized system, the response is one of relative silence.

In addition, Congress is told by the Office of Management and Budget that certain research areas--e.g., post-harvest technology research--are no longer the domain of public research; they should be turned over to the private sector. However, Congress soon discovers that there is little assurance that the private sector will conduct such research and that there is inadequate knowledge of its impacts on society.

Congress is also concerned about: distribution of research benefits in an agriculture system that is becoming more and more industrialized, allocation of research resources in domestic and international research activities, mechanisms used to develop research priorities, and the expertise and interest of Federal,

State, and private organizations for identifying and conducting needed research.

These concerns culminated in a request by Congress for the Office of Technology Assessment to conduct an assessment of U.S. food and agricultural research. I will highlight the major issues in this study that have been transmitted to Congress and will be available to the public in the soon-to-be-released report.

I. Lack of Goals and Research Priorities for the Food and Agricultural Research System

There is a lack of well-defined and agreed-upon national goals for U.S. food and agriculture. This has been a major deterrent in formulating policy and for the research community in planning a research agenda.

A goal is the end toward which effort and resources are directed. The end must be definable and achievable, at least in theory. Other than general goals of self-sufficiency, the U.S. has not had well-articulated national food and agricultural goals.

There are implicit goals, but they provide little help in formulating policies and giving direction to the research community. One implied goal is to provide an ample supply of nutritious food for consumers at reasonable cost with a fair return to farmers within an agricultural system that is sustainable in perpetuity. However, this goal is open-ended and therefore not achievable. For example, what is meant by "ample supply"? Does it mean a) produce to meet U.S. demands? b) produce to meet U.S. demands plus economic demands of the world market? or c) produce to meet (b) plus concessional food to poor countries? How would we know when an "ample supply" is achieved? What is "nutritious" food? How is it defined? Is a "reasonable cost" to consumers 15, 20, or 30 percent of disposable income or some other figure? Is a "fair return to the farmer" 10, 15, or 20 percent on investment? And when should we expect to achieve this "fair return"...1995, 2000, 2500? Is a sustainable system one that tolerates 5, 10, or 15 tons an acre of erosion annually?

These and other questions must be answered for a goal to have meaning and to be useful for the research community in planning a research agenda. With such questions unanswered, setting research priorities is a most difficult task.

Even if goals were to be established, there is a problem in research priority determination. There is no satisfactory long-term process for evaluating research activities, research opportunities, and development of research priorities within the food and agricultural research system. Decisions are made on an

ad hoc basis with very little coordination among USDA, SAES, and other agencies conducting food and agricultural research. Long-term research planning, updated every 4 years or more, could be accomplished by an intensive study involving research administrators, scientists, users, and consumers.

Research-priorities determination is important--now more than ever before. Requests for across-the-board increases for each of the disciplines will not be convincing to the appropriations committees. Across-the-board requests for increased funds appear to the appropriations committees more as a defense of the research bureaucracy than as an effort to solve the problems of agriculture.

Congress established the Joint Council on Food and Agricultural Sciences and the National Agriculture Research and Extension Users Advisory Board to aid in coordination and priority setting. Neither of those groups has the capacity to conduct a long-range systematic study of research priorities that involves scientists, research administrators, users, and others; neither was set up to do that.

Involvement of scientists and research administrators is needed for the obvious reason that they have the expertise and are the performers of the research. Research users are needed because they have specific problems that need to be addressed by research. Likewise, consumers and others have legitimate concerns that the research community needs to address.

Above all, results of such a study must be used in the appropriations process. The appropriations committees can use the results of such a system-wide study as a guiding light for the identification of agricultural problems, the research needed to attack those problems, and the funding required to support this research.

II. Inadequate Federal Funding of Food and Agricultural Research

Over the past decade there has been a substantial change in research funding. Despite the fact that the USDA was a pioneer and long a leader in research in the U.S. Government, the present situation is quite different. Recent USDA research expenditures have been the smallest of any major Federal research agency. In 1979, USDA's share of Federal research expenditures was 1.5 percent of the total compared with Department of Defense--45 percent, Department of Energy--16 percent, and Department of Health and Human Services--12 percent.

Purchasing power of total SAES and USDA agricultural research

expenditures increased 23 percent in constant dollars for 1966 to 1979. The pattern, however, differed sharply by each: USDA real expenditures increased 1 percent, while those of SAES increased 40 percent. Moreover, within USDA between 1966 and 1979, Agricultural Research Service funds in constant dollars decreased 3 percent and the Economic Research Service decreased 8 percent. Federal Hatch funds, which account for about 20 percent of SAES funding, increased on the average 1.5 percent in constant dollars over this time period, while State appropriations, which are the SAES major source of funds, increased 57 percent in constant dollars.

Total expenditures by private enterprise for research are about three-quarters of the expenditures of Federal and State funds combined.

There is strong justification of public funding of food and agricultural research based upon benefits well in excess of costs. Issues of equity, because of the interstate flow of food and related commodities and the spillover effect of research from one geographic area to another, are further justification. Consumers are the ultimate beneficiaries of research. However, the distribution of the consuming population among States is related to the distribution of agricultural production to a very limited degree. Paradoxically, Federal research funding, relative to State funding, has decreased as the interstate flow of commodities has increased. Thus taxpayers in food-surplus States are subsidizing consumers in food-deficit States, and the degree of subsidization is increasing steadily.

The major reason for the lack of Federal funding is that the food and agricultural research system has not sufficiently made its case. There is a lack of interest and appreciation of research potential and general low level of research as a priority within USDA. To be sure, the Office of Management and Budget (OMB) puts limits and pressure on all departments to stay within monetary levels, but departments have discretion within these limits to make priority adjustments within their departments. Up to 1980, the executive budgets have not shown strong USDA support for research. As a general rule, Congress has appropriated the full requested budget level for agricultural research and in some cases has increased the level of USDA funding. The major problem is within the research system and its ability to make its case to the administration.

III. Blurring of Roles by the Research Performers

Historically there has been a role for a strong national USDA research program. This has been carried out by the Agricultural Research Service, Human Nutrition, Economic Research Service, and

Federal funding to the States. The USDA role has been associated with broad regional, national, and international activities. The role of SAES, insofar as Federal funds are concerned, has been primarily for local, State, and regional problems. There is now considerable overlap; some portions of the Federal and State roles are becoming indistinguishable.

There are several reasons for this. As Hatch formula funds have decreased to SAES, new funding sources were sought. To a certain degree, Congress furthered this trend by appropriating funds for special and competitive grants. The director of SAES frequently has little opportunity to exert management or program guidance on these programs. Often, the research has little significance to local and State problems. Individuals who make decisions on funding under the grant system are not always accountable to legislative and agricultural interests. In addition, relationships between USDA and SAES at the administrative level are unnecessarily competitive and in some cases destructive. But of even greater significance is the effect of dispersal of USDA research resources and the resultant substantial autonomy in ARS regional and area offices. This situation represents a degeneration of the operational and coordinating functions that traditionally have been carried out by USDA for national and regional programs.

Many comment that the problem is a result of continuing tight budgets and that all problems would be solved if only there were enough money. While undoubtedly the problems are exacerbated by continuing tight budgets, this is only a superficial answer. The facts are that at the administrative level, there is in a general sense no agreement on the roles of SAES and USDA, and until there is some understanding and agreement of the roles of these two primary public actors in U.S. food and agricultural research, there can be no effective agreement on overall cooperation in the very important aspects of agricultural research. Effective cooperation between any two individuals, organizations, or nations requires agreements on the subjects on which to cooperate and in the role of each, and each must cooperate from a base of relative strength. To an outsider of the system, it does not appear that this should be a difficult task if the participants can realistically evaluate their roles, strengths, and responsibilities in an atmosphere free of bureaucratic considerations.

Although USDA and SAES are the major public actors in food and agricultural research, at least ten other Federal agencies conduct or fund some kind of food and agricultural research. To better coordinate the research activity of USDA and these other agencies, Congress created the Committee on Food and Renewable Resources. This committee, composed of these Federal agencies and

chaired by USDA, is a potentially useful forum for information exchange, but it has yet to satisfactorily fulfill its role. In fact, it has yet to determine the type of research and the amount of funds spent by each of these agencies on food and agricultural research.

Private industry contributes to the productivity and efficiency of American agriculture in a number of ways: a) invention, improvement, and manufacturing of farm machines; b) selection and improvement of crop plants and animals; c) development and production of a wide range of agricultural chemicals such as insecticides, fungicides, and fertilizers; d) processing, preservation, and production of both animal feed and human food; and e) development and improvement of a wide variety of farm structures.

Although different segments of the food and agricultural industry perceive their roles differently, most of them are generally motivated by economic reasons. If management can foresee a profit from their research efforts, funds are set aside for the research program. In many cases, industry research results in payoffs not only for industry but also for both the food and agricultural sector and consumers.

In recent years, the Office of Management and Budget (OMB) has adopted a policy of determining which research areas should be performed primarily by industry. OMB has done this with the concurrence of USDA and with little or no discussion with industry itself. However, OMB judgments have little effect on the types of research industry undertakes. One result of this situation is that there are certain areas of research in which both agriculture and consumers are not being served as they should. The post-harvest technology area is one example.

IV. Concluding Comments

The need for some degree of relatedness in the various food and agricultural research undertakings is clear. Some form of leadership is essential. The Department of Agriculture, designated by Congress as lead Agency for food and agricultural science, is central. It is directly involved in the acquisition and distribution of Federal funds, coordinates with other Federal agencies, and comes closer to perceiving the broad public interest than does any other segment of the research system.

At present the research system is in disarray; there is no spokesman. Research continues to lack prominence within USDA as witnessed by inadequate funding requests to Congress, the continuing decrease in number of positions assigned to agricultural research, and the lack of young scientists. It is

interesting to note that ARS scientists 50 years of age or older account for almost 50 percent of all ARS scientists, while those 30 years of age or younger account for only about 2 percent. NIH in comparison has only 15 percent of its scientists 50 years of age or over and about 25 percent 30 years of age or younger. ARS statistics do not indicate a research organization that is growing and progressive. The SAES prefer a loose, voluntary, cooperative type of guidance from Washington with no strings attached--i.e., leave the money on the stump. However, leadership and coordination of the system must be exercised if the research system is to appear to the appropriations committees as something other than bureaucratic self-seekers. This does not mean, however, that USDA or any other Federal agency should be coordinating or supervising research conducted by SAES with State or privately supplied funds, which are four times greater than the Federal input.

In his Cosmos Club lecture of April 1980, Dr. John W. Gardner addressed the subject of "The War of the Parts Against the Whole." He notes the continued development of various "groups" that expanded in number and diversity since World War II--and in their capacity to organize for combat. He concludes his lecture with the following comment:

"Our pluralistic philosophy invites each organization, institution, or special group to develop and enhance its own potentialities. But the price of that treasured autonomy and self-preoccupation is that each institution concern itself also with the common good. That is not idealism: it is self-preservation. The argument is not moralistic. If the larger system fails, the subsystems fail. That should not be such a difficult concept for the contending groups to understand."

There may have been a time when the current situation could be indulged. This is not so now. This is a time for leadership to emerge from within the system and for each of the component parts to work together for the good of the system, as opposed to the good of only one part of the system. This is a time when the food and agricultural problems need to be identified, the research to attack those problems determined, the role of each research participant identified, and the organization of each participant evaluated to determine if it can effectively carry out its role. Only then will the research community be able to merit and obtain the resources needed to meet the food and agricultural challenges of the future.

Robert J. Tosterud, John O. Gerald and Paul E. Kepler, Office
of Transportation

OUTLOOK '82

1982 Agricultural Outlook Conference, Session # 31,
Washington, D.C.

For Release: 2:15 p.m., Wednesday, November 4, 1981



The strong upward trend of transportation requirements for exports of agricultural commodities existing throughout the 1970's was halted in 1980-81, but it appears likely to resume in 1981-82. At present, the projections of exports for grains, soybeans, products of grains and soybeans, and cotton portend an increase in 1981-82 of 18.4 million metric tons (mmt) over 1980-81 (Figure 1 and Table 1). We see no major physical deficiency in the transportation and port handling systems that will constrain the achievement of this projected volume, but the trade will want to watch negotiations on several questions as the year progresses.

In addition to expanded exports in 1981-82, domestic use of grains and soybeans are projected to increase. Feeding may account for 7.5 mmt increase in use of grains, and crushing of soybeans is expected to grow by 4.0 mmt. Both of these activities occur largely in areas nearby grain and soybean acreages, so export increases remain the principal source of increased transportation demands.

Movement to Export Points

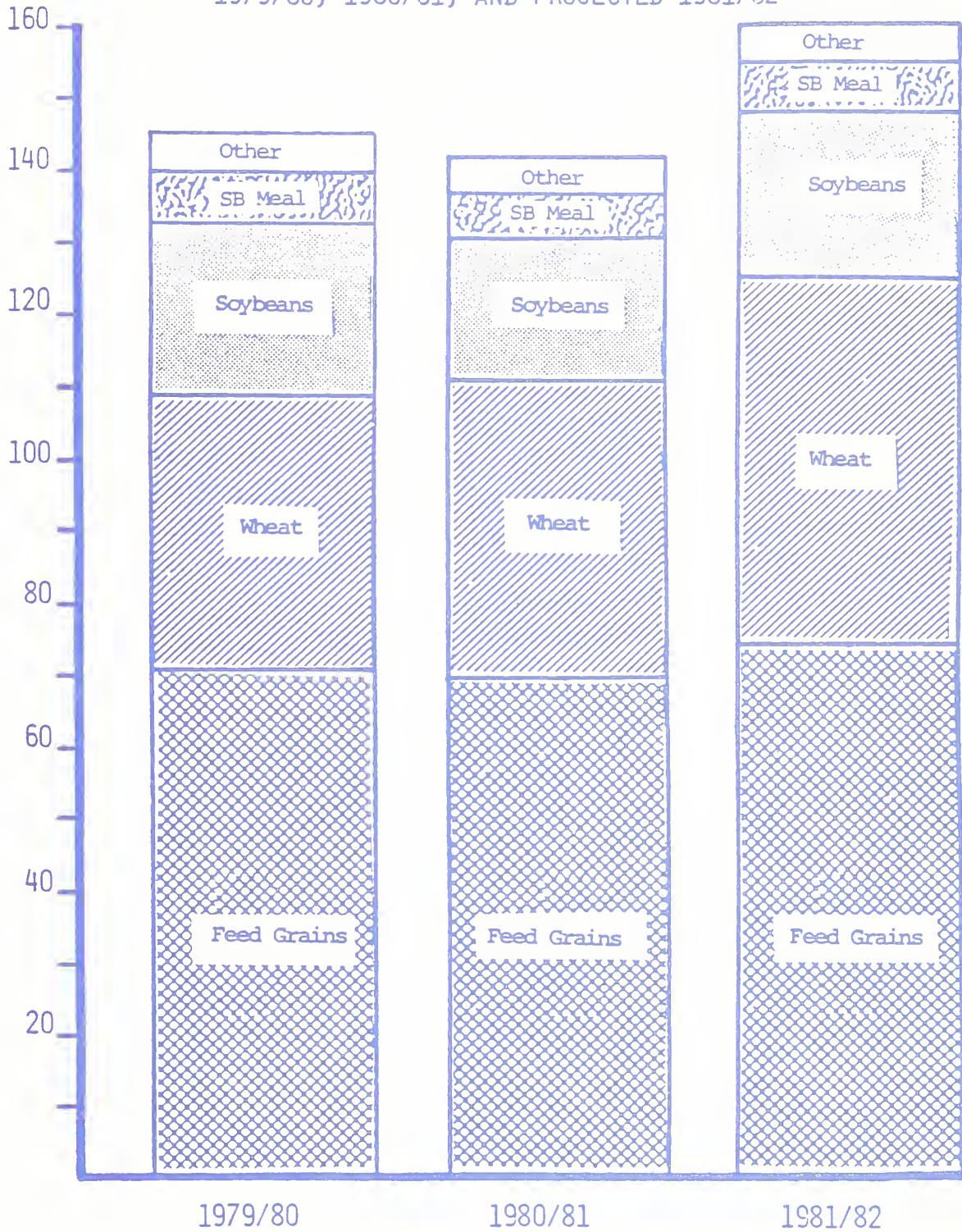
Grains (including soybeans) and cotton together usually make up about 90 percent of the tonnage of agricultural exports. These commodities are transportable by rail, truck, and truck-barge, and most of this tonnage competes for the same types of transport equipment. Nonetheless, some regional specialization in production along with alternative export points results in some differences in type of transport used. Asian markets tend to take more of our food grains while European markets take more feed grains and soybeans. European destinations account for most shipments out of Great Lakes and North Atlantic ports, and Asian destinations account for nearly all shipments out of Pacific coast ports. Wheat moves more heavily by rail to Texas ports and by rail and truck-barge to Pacific Coast ports. Corn and soybeans can move by truck and rail to Great Lakes' ports, rail to Atlantic, Gulf and Pacific ports, and truck-barge to Lower Mississippi River ports. Thus, the pressures on specific types of transport equipment may change in response to change in export destinations and the commodity mix of export sales as well as to change in the total volume of export sales (Figures 2-4).

Wheat accounts for 10.6 mmt of the 18.4 mmt increase in exports projected for 1981-82; feedgrains for 4.2 mmt; and soybeans for 3.2 mmt. The USSR is expected to be a major destination for increased exports in 1981-82, and press reports indicate heavy buying of wheat by the USSR.

Figure 1

MILLION
METRIC TONS

EXPORTS OF SELECTED COMMODITIES
1979/80, 1980/81, AND PROJECTED 1981/82



*OTHER INCLUDES COTTON, RICE AND SOYBEAN OIL

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, WORLD AGRICULTURE SUPPLY
AND DEMAND ESTIMATES, OCTOBER 13, 1981

Table 1--U.S. agricultural exports: volume of selected commodities,
1979/80 and 1980/1981 and projected for 1981/82*

Commodity	1979/80	1980/81 ^{1/}	1981/82 ^{2/}
-- Million Metric Tons --			
Wheat	37.4	41.1	51.7
Feed Grains	71.4	69.9	74.1
Rice	2.7	3.0	2.6
Soybeans	23.8	19.7	22.9
Soybean Oil	1.2	.7	1.0
Soybean Meal	7.2	6.3	6.6
Cotton	2.0	1.3	1.5
TOTAL	145.7	142.0	160.4

* Source: U.S. Department of Agriculture, World Agricultural Supply and Demand Estimates, October 13, 1981.

^{1/} Forecast.

^{2/} Projected.

Figure 2

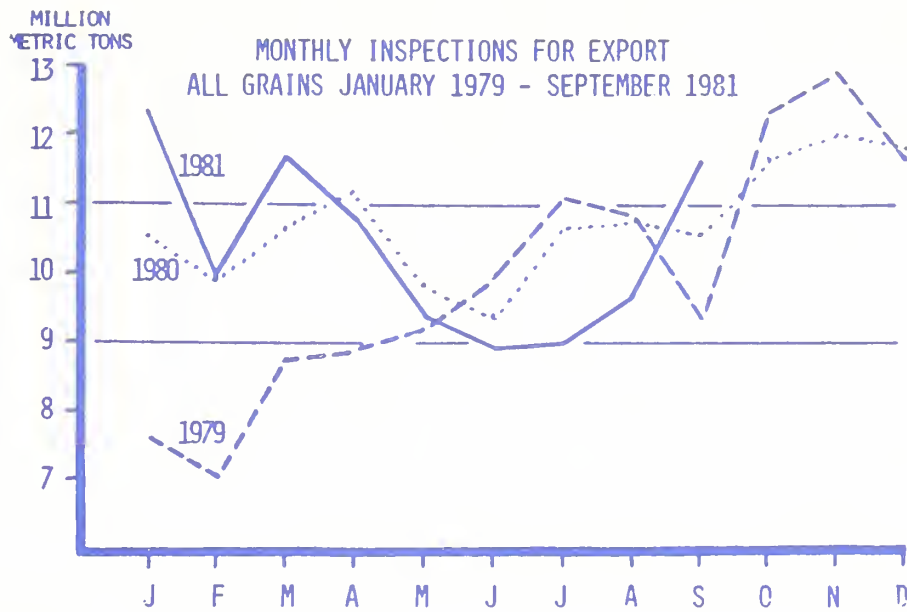
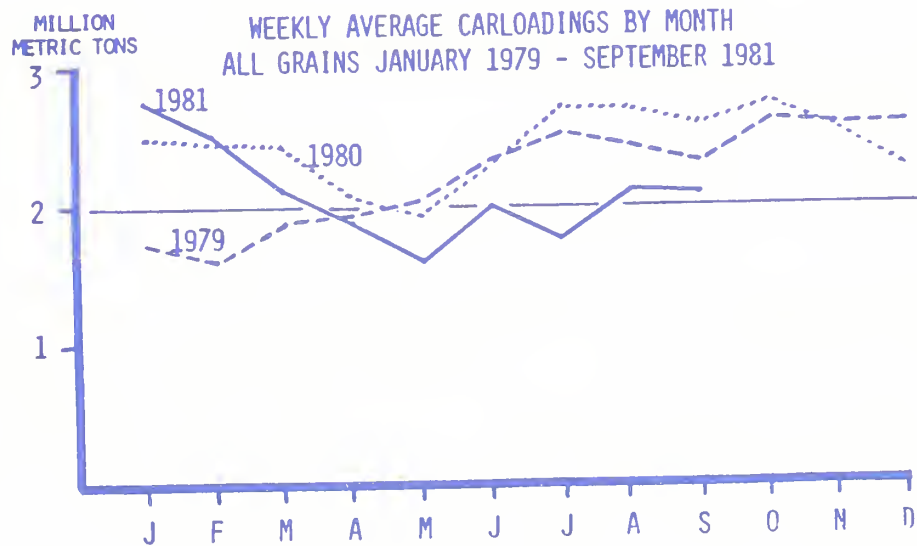


Figure 3



Also, the North Dakota wheat harvest in 1981 surpassed that of Kansas. Therefore, increased movements of wheat by rail to Texas Gulf ports and by truck and rail to Great Lakes ports will account for most of the wheat export increases. The increases in feed grain exports may lead to further increase of unit train movements to Pacific Northwest ports, but the increased soybean exports will likely be accommodated in normal patterns.

Last November, we pointed to some potential problems in the transport system in meeting export projections. These were: large increased sales to Mexico; the possible closing of certain rail corridors through settlement of the bankruptcies of the Rock Island and Milwaukee Railroads; and the strong increase in demand by foreign customers for U.S. mined coal. Since mid-1981, conditions in movement of agricultural commodities into Mexico have eased, and there is no significant threat of congestion and danger to 1981-82 export projections from this source. It appears that disposition of the properties of the Rock Island may be achieved without additional disruption. The Milwaukee bankruptcy judge has ordered the sale of a 519 mile line from Ortonville, Minnesota to Miles City, Montana. This segment poses concern for shippers and communities on the line, but it is not a major corridor for export grain movements. Foreign demand for U.S. mined coal has not created a shortage of ocean shipping, and so far, there is no concern of this occurring in the year ahead.

Rail Labor Contracts

Negotiations of contracts to replace existing rail labor contracts are now in progress. Based on the settlements reached in the three contract renewals occurring in the 1970's, one might hazard a guess that there will not be a general rail stoppage in the months ahead. There were several stoppages of one or more railroads for brief periods in the 1970's, and one instance of a somewhat extended slowdown on one railroad.

If a general railroad shutdown of more than a few days were to occur, agriculture's suddenly increased demands for waterway and highway transport would have to compete with increased demands from other sectors, and rates would escalate very quickly. Neither highway nor waterway rates for unmanufactured grains, soybeans and cotton are regulated by the Interstate Commerce Commission, and are therefore free to vary as demands and costs change.

Privately-owned Railcars and OT-5-E

Another potential source of problems in 1981-82 is the large number of privately-owned jumbo covered hopper cars (Figure 5). Contracts between these owners and railroads concerning use of the privately-owned cars are subject to a circular, OT-5-E, of the Association of American Railroads. That circular contains a parenthetical statement, "The use of private cars other than tank cars is optional and railroads are not obligated to use such cars if they are in a position to furnish suitable cars." Conditions in 1980-81 were such that several railroads invoked this condition, leaving some shipper-owned fleets idle. As movement needs of grains and soybeans in 1981-82 increase, railroad-owned jumbo covered hopper cars may not be adequate to meet needs, but shortages could first occur in patterns such

Figure 4

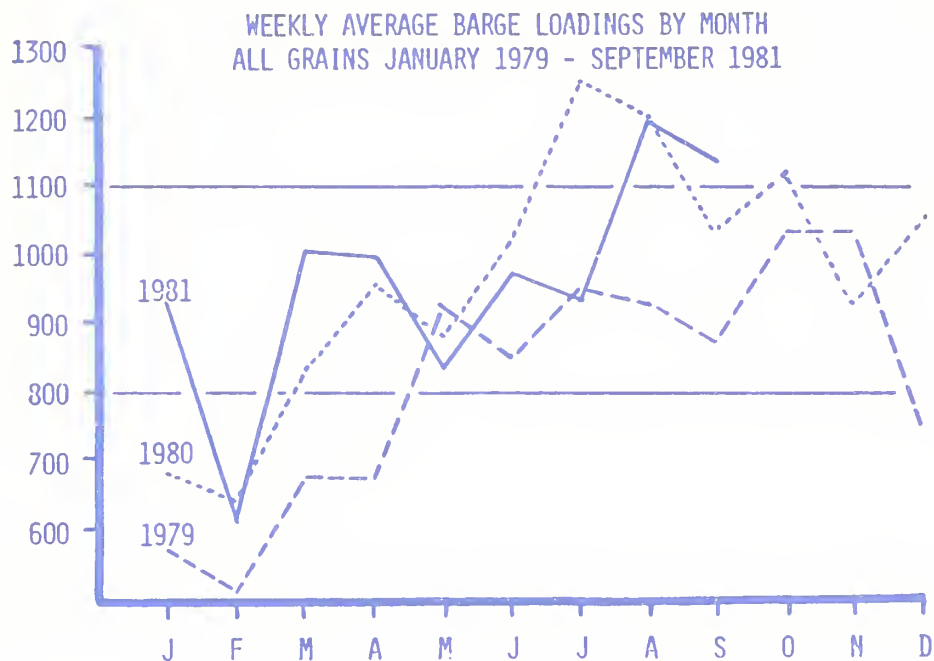
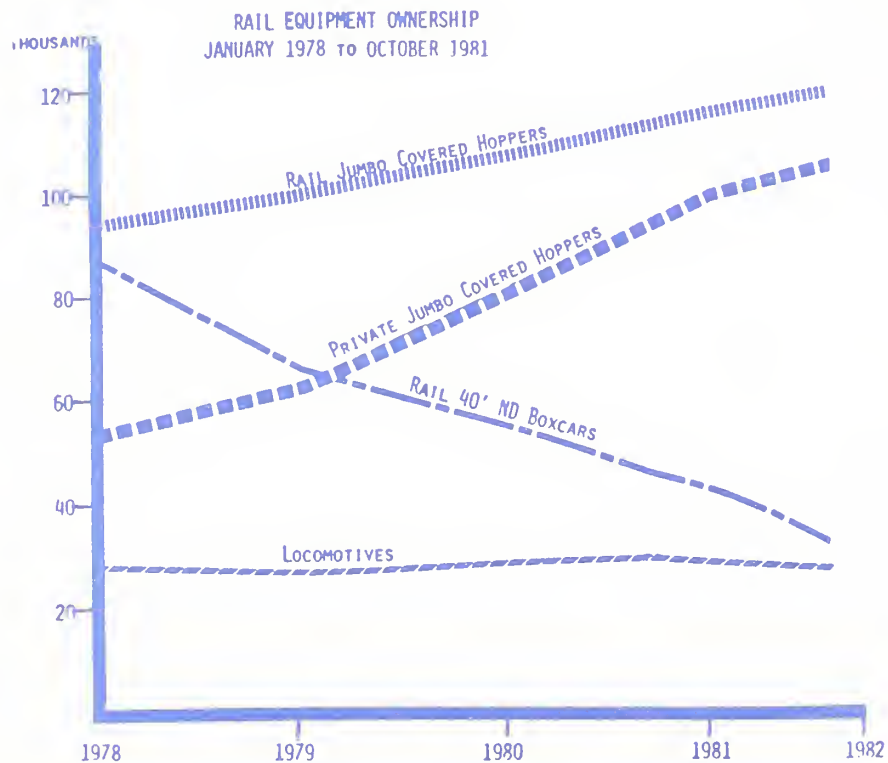


Figure 5



that those railroads invoking OT-5-E rights in 1980-81 are not immediately affected. We do not now have information sufficient for predicting if and where such conditions will occur, but the trade will want to watch developments in this controversy.

Waterway User Charges

A factor that could shift some of agriculture's increasing demands for transportation services in 1981-82 to the railroads, thereby creating more potential for congestion and/or railcar shortages, is that of sharp increase in waterway user charges. Charges increased from four cents per gallon of fuel to six cents on October 1, 1981. However, the President has proposed full recovery of Federal expenditures for navigation, and there are estimates that this would require increase in fuel taxes to 30 to 40 cents per gallon.

The U.S. Department of Transportation is conducting a study of impacts that full recovery of Federal expenditures will have on traffic diversion and barge rates. At the time this paper was written, the study was not available. However, agricultural commodities moving on the inland waterways move much farther on the average than does other waterway traffic, so it is likely that user charges per ton will be larger for agricultural traffic. These larger charges also imply significant diversion potentials.

Those grain traders shipping by inland waterways to export elevators will no doubt keep well informed about the status of the DOT study and legislative processes necessary to effect the President's goal. Other traders would be well advised to keep generally informed about the status also since developments could impact their ability to obtain transport capacity adequate for their shipping needs.

Movement for Domestic Use

Feed Ingredients

Feed grains, grain mill by-products, and oilseed cakes and meals are heavily used in feeding livestock at locations other than on the farms where the grains and oilseeds are grown. Cattle, hog, and turkey feeding occurs primarily in areas with heavy feed grain and oilseed production. Feeding for milk and egg production occurs more nearly in proximity to metropolitan population centers. Broiler feeding is concentrated in Southern States and a few other States outside of the areas with heavy grain production.

As mentioned earlier, feeding and soybean crushing uses are projected to increase in 1981-82 by 7.5 mmt and 4.0 mmt respectively. Beef production is expected to be up 2-4 percent while pork production is expected to be down 3-5 percent. Dairy cow feeding will be about the same level as in 1980-81. Turkey feeding will decline while broiler feeding will increase enough to offset the decline in turkey production.

Perishables

Perishables--fluid milk, red meats, potatoes, fresh fruits and vegetables and poultry and eggs--add about 100 mmt to the domestic transportation requirements of agriculture. However, railroads play only a small role today in movement of these commodities, and water carriage of them is practically nonexistent. This throws the burden of transporting these commodities and live animals onto truckers, with some of the more perishable commodities and live animals moving by air on longer domestic and export hauls.

By 1979, the railroads' share of fresh fruit and vegetable shipments had dropped to less than 10 percent of total shipments (Table 2). Using authority granted by the Railroad Revitalization and Regulatory Reform Act of 1976, the Interstate Commerce Commission exempted rail transportation of this traffic from economic regulation. It was thought by some that this action would encourage railroads to compete more intensively for perishable traffic, and results in 1980 were viewed as preliminary evidence of a renaissance of rail transport of perishables. Results for the first six months of 1981 do not further confirm the view. A possible cause of the return in 1981 to traffic share trends existing before 1980 is the relatively lower exempt truck rate/cost ratios for fresh fruits and vegetables existing in 1981 as compared to 1980 (Figure 6).

Transportation Rates

Railroad rate increases from 1969 through 1979 (Table 3) outpaced increases in two general indicators of inflation, the gross domestic product implicit price deflator index and the consumer price index for services. With 1969 equal to 100 for each available series, 1979 indexes were as follows:

Gross domestic product implicit prices	204.5
Consumer services' prices	208.7
Railroad rates	
All products	243.4
Farm products	235.0
Food products	239.0

Grains and soybeans account for a large part of all farm products hauled by the railroads. Beginning with December 1978, a separate rate index for grains has been computed monthly. The following tabulation shows indexes for various periods with December 1978 equals 100:

	<u>1979</u>	<u>1980</u>	<u>January 1981</u>	<u>April 1981</u>	<u>July</u>
Gross Domestic Product	102.9	112.1	117.5*	119.8*	N.A
Implicit Prices					
Railroad Rates					
All Products	105.4	123.6	135.9	139.0	144.
Farm Products	106.5	123.2	133.4	138.0	149.1
Grain	106.9	127.5	139.8	144.0	149.2
Food Products	105.0	124.3	138.3	141.6	146.3

* Available on a quarterly basis only; approximate monthly comparisons are computed by averaging appropriate quarterly indexes.

Table 2--Shipments of fresh fruits and vegetables by mode of transport,
1979 and 1980 and monthly 1981

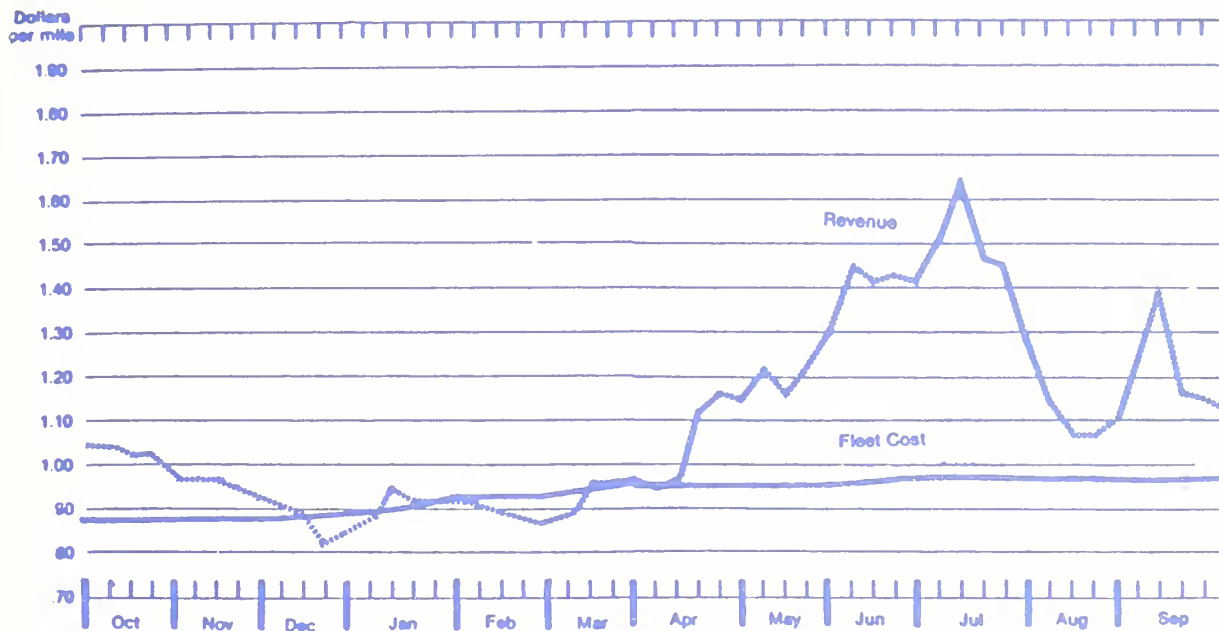
(weekly averages)

Year and Month		Rail	Truck	Total	Rail Share
1978		915	7,322	8,237	11.1
1979		806	7,558	8,364	9.7
1980		1,218	7,594	8,812	13.8
1981	J	833	7,518	8,351	10.0
	F	811	6,802	7,613	10.7
	M	800	6,806	7,606	10.5
	A	712	7,873	8,585	8.3
	M	873	9,717	10,590	8.2
	J	1,153	9,873	11,026	10.5
	J	644	8,200	8,844	7.3

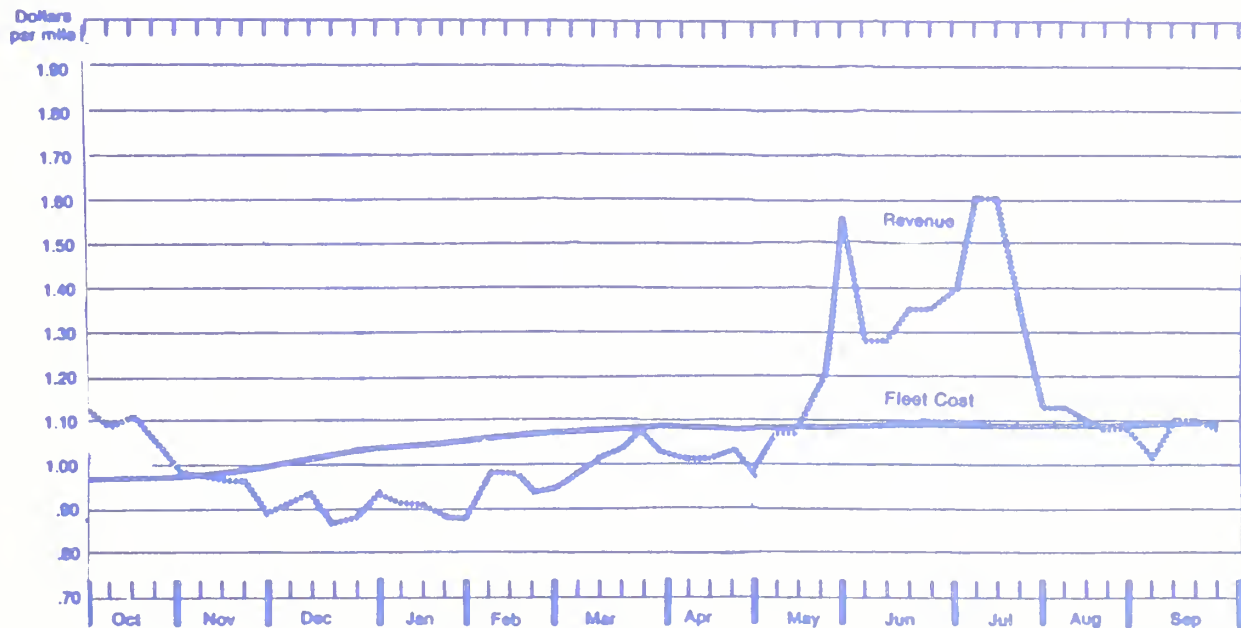
Source: Agricultural Marketing Service, U.S. Department of Agriculture.

Figure 6
Revenue Cost Comparison of Fruit and Vegetable Truck Movements
Southern California to New York, October 1979 - September 1981

October 1979 to September 1980



October 1980 to September 1981



Revenue equals midpoint of weekly range taken from Truck Rate Report divided by mileage from a point in Southern California to New York City. Cost taken from Truck Cost Report

Table 3--Rail freight rates: indexes for selected commodity groups,
1976-1980, and selected months, 1981

Period	All Products	Farm Products	Food Products	Grains
		(1969 = 100)		(Dec. 1978 = 100)
1976	186.6	182.7	185.1	N.A.
1977	199.1	191.3	195.3	N.A.
1978	213.0	204.9	210.0	N.A.
1979	243.4	235.0	239.5	106.9
1980	285.4	271.8	283.7	127.5
1981				
Jan.	313.9	294.4	315.7	139.8
Apr.	321.0	304.6	323.1	144.0
July	333.2	314.5	333.8	149.5

Source: Department of Labor, Bureau of Labor Statistics.

The table shows that railroad rate increases since 1979 have continued to exceed general price increases by substantial margins, and grain rate increases were larger than those for other traffic categories. Unfortunately, substantial change over the past several years in types of rail service made available for grains--multiple car and unit train versus single car, etc.--render constant service based indexes invalid as indicators of costs of grain transportation by rail.

Indexes of rates for other modes used by agriculture--trucks and barges--are not available.

Conclusions

The transportation system appears to have adequate capacity to meet agriculture's needs in 1981-82. In fact, thousands of jumbo covered hopper cars were reported to be idle in mid-October 1981, despite record heavy movements of grains and soybeans. However, the outcome of negotiations on three sensitive issues could lead to congestion or inadequacy for one or more modes. Shippers will want to watch the progress of these negotiations. These are rail labor contracts, use of privately owned covered hopper cars, and waterway user charges.

Railroad rates have increased somewhat more rapidly over the past 10-12 years than have other prices. This offers some basis for suggesting that railroad rates may be a source of stability in general price inflation in 1981-82, but rapid changes recently in rate and service offerings make it impossible for us to project costs of transport by rail.

Ralph O. Avery, Assistant Vice President
Burlington Northern Railroad

1982 Agricultural Outlook Conference, Session # 31
Washington, D.C.

For Release: Wednesday, November 4, 1981.



During the last half of the 19th Century, contracts between rail carriers and a shipper or a group of shippers were fairly common. As a matter of fact, it was the existence of these contracts, or at least the advantages, disadvantages and discriminations accorded by these contracts on certain shippers --often at the expense of competing shippers -- that gave impetus to the clamor for state and federal regulation of rail carriers. Because of the injustices resulting from the existence of contracts and some other practices that were not considered in the public interest, the passage of the Interstate Commerce Act resulted in 1887.

Prior to 1887, there was some question as to the rights of rail carriers and shippers to enter into special contracts, however, a settlement of that issue is unimportant because any such rights that may have been possible were abrogated by the Interstate Commerce Act. It was not until the passage of the Staggers Rail Act in October, 1980, that rail carriers were specifically permitted to make contracts other than those which were set forth in tariffs filed with the Interstate Commerce Commission.

From 1887 until November 1978, the Commission and the Courts held that contracts covering the transportation of goods by rail other than those published in the prescribed tariff form and on file with the Interstate Commerce Commission were unlawful per se. In Ex Parte 358-F-CHANGE OF POLICY RAILWAY CONTRACT RATES (General Policy Statement) served November 9, 1978, the Commission announced that it would consider contracts that may have existed between the parties as evidence in determining maximum reasonable rates. This policy statement created quite a furor, since it was widely believed in the Transportation industry that there was no underlying statutory authority for such a position. Since at that time there were the beginning trends towards deregulation or re-regulation of the regulatory agencies by the Congress, the contract rate issued remained somewhat dormant. Effective October 1, 1980, the Staggers Rail Act amended the Interstate Commerce Act, authorizing contract rates by rail carriers. Specifically, 49 USCA Section 10713 (Section 208 of the Staggers Act) provides that "one or more rail carriers providing transportation subject to the jurisdiction of the Interstate Commerce Commission under

sub-chapter One of Chapter 105 of this title may enter into a contract with one or more purchases of rail services to provide specified services under specified rates and conditions. Such a rail carrier may not enter into a contract for purchases of rail service except as provided in this section." The section then provides the conditions under which such contracts may be established.

It is my view that the concern of the rail transportation industry and those served by that industry are not with the existence of contract rates, nor the statutory authority for these rates, but rather the rules of the game for negotiating and entering contracts. Let's look at some of these concerns.

The law requires that each contract entered into under this section "be filed with the Commission together with a summary of the contract containing such non-confidential information as the Commission prescribes." The Act also provides the grounds on which a shipper may file a complaint. These grounds are not the same for all shippers. Shippers of agricultural commodities (including forest products and paper) are accorded special treatment. At least, since additional grounds are accorded for a complaint by such shippers, a case for special treatment can be made. This special treatment may be more illusory than real, however, since the agricultural shipper must prove that the rail carrier has unreasonably discriminated by refusing to enter into a contract with the complaining shipper "for rates and services for the transportation of the same type of commodity under similar conditions to the contract at issue, and that the shipper was ready, willing and able to enter into such a contract at a time essentially contemporaneous with the period during which the contract at issue was offered." It should be remembered, the contract itself is not available for review by competing shippers in a Commission proceeding. Only "a summary of the contract containing such non-confidential information as the Commission prescribes" is available for public review. Now, I don't know how many of you have had the opportunity to review these summaries of non-confidential information. If you have not, you could miss the point I'm trying to make. It is simply this. How do you prove that a rail carrier has refused to enter into a contract for rates and service for the transportation of the same type of commodity under similar conditions to the contract at issue if you don't know the rates and conditions of the contract complained of? The Summary probably will not give you much information.

Section 10713 also provides that in the establishment of contracts for the transportation of agricultural commodities (including forest products and paper), a rail carrier may dedicate not more than 40% of the capacity of such carrier's owned or leased equipment by major car type. Prior to passage of the Staggers Act, it was widely held by those supporting

contract rates that a prime contributor to the deteriorating financial condition of the rail industry was the poor utilization of available equipment. Contract rates and long range planning conceivably could cure this situation and could lead the rail industry to better days. Apparently, it was also felt that a 40% dedication was the maximum that should be permitted. Problems may arise with this 40% restriction. Let's look at a particular case. Since shipments of pulpwood fall under the special condition in this section of the Act, and since it is a low rated commodity which returns very low margins to rail carriers, it provides a very good example of why contracts subject to this restriction are not likely to accomplish the hoped for goal. Given a specific rail carrier has 500 pulpwood cars and 50 pulpwood shippers, one of whom has recently expanded his facility and will ship X number of tons, requiring 100 cars in dedicated service over the next 12 months. This shipper has also planned an expansion which will double his production over the ensuing 24 months at the end of which period he will require 200 cars. He enters into a contract with the rail carrier -- one of the provisions of which requires the dedication of 100 of that carrier's pulpwood fleet. Six months later, one or two, or more other pulpwood shippers enter into a contract or contracts with the same rail carrier, which also requires the dedication of 100 cars. The original contract shipper has completed his expected program and now desires to sign a contract which would require the dedication of the additional 100 cars. Under the 40% restriction clause, the carrier is prohibited from contracting for any additional pulpwood equipment. Of course, the answer could be for the carrier to acquire more free running additional equipment, however, it must be pointed out that the return on investment on that equipment may not justify this purchase. As a matter of fact, in many cases only through a contract with its resulting increase in equipment utilization can the carrier even hope to recoup its initial investment in the pulpwood cars.

The above is not intended as a criticism of the congressional authorization of contracts or of the Commission's promulgation of the rules governing these contracts. It is merely intended to point out that the original goals that contracts were expected to attain became obscured in the legislative process due, we believe, to the well meaning, but misdirected efforts of special interest groups.

The essential elements of a contract are generally considered to be: (1) proper subject matter; (2) competent parties; (3) legal considerations; (4) mutuality of agreement; and (5) mutuality of obligation. We feel no need exists to subject these contracts to the ambiguous and self defeating provisions contained in Section 10713.

Contracts for rail service have been lawful for approximately one year and the number of contracts as well as the nature of these contracts must be a disappointment to the proponents of contract legislation. This is certainly true in the case of contracts for the transportation of agricultural commodities. Contracts on forest products and paper for the most part reflect the efforts of some rail carriers to increase their share of the rail market share through rebates. On grain and grain products an annual volume commitment is the predominant method used to achieve the same results. It would appear that so far railroads have used this new freedom as a marketing tool chiefly in intra-modal competition.

While there have been a few contracts covering the movement of whole grains from terminals to ports or processors, there has been little interest evidenced in the initial movement from country origin. This is in part due to the problem of satisfying hundreds of shippers "for the transportation of the same type of commodity under similar conditions" and the unwillingness of shippers to enter into long-term contracts. Without this commitment rail carriers feel contracts have very little value.

In the second year of Staggers, we look for an expansion of contracts. We expect this expansion will include contracts that will improve the return on sunk investment and protection of planned investments. Marginal branch lines which may now be a part of a disinvestment program could become part of a reinvestment program through a mutual commitment available by contracts.

R. A. Wilson, President and Chief Executive Officer,
Agri-Trans Corporation

1982 Agricultural Outlook Conference, Session #31
Washington, D.C.

For Release: Wednesday, November 4, 1981



As president of a commercial barge line which derives its revenues by transporting agricultural products along the Midwestern inland waterways, I am particularly pleased to have this opportunity to address you on the issues of agricultural river movements in the 80's. The management of Agri-Trans Corporation, with its unique owner constituency being comprised of six large agricultural cooperatives, also understands the implications of these issues on the shipping community.

But before discussing specifics, allow me to present a brief overview of the industry in which my Company operates. The commercial river industry has an excellent reputation for being responsive to the needs of America's shippers. It is also the most inexpensive, fuel efficient and highly productive mode available for the transportation of bulk products -- products which are the lifeblood of America's economy and the fiber of its industrial and agricultural strength.

In addition to being a major mover of export grain and grain products, the river system of this country moves a tremendous volume of energy commodities to include petroleum products and coal. Building products such as sand, gravel and cement also move in large supply via the rivers.

The efficient movement of these bulk commodities by river is facilitated by several key advantages enjoyed by barge operators. From the shipper's standpoint, the most impressive credential of river transportation is cost. On the average, it costs about 7/10's of one cent to move a ton of cargo one mile by barge, compared to 2.6 cents by rail and over 10 cents by truck. While our industry moves about 12 percent of the nation's total freight, it does so for only two percent of the total cost.

The cost advantages are due mainly to the fuel efficiency and cargo capacity of barge operations. Addressing fuel efficiency first, it is an accepted fact that a barge

can carry a ton of freight 514 miles on one gallon of fuel. Corresponding figures for rail and truck are 202 miles and 59 miles respectively.

Combine favorable fuel consumption with the massive carrying capacity of barges and the result is an overwhelming plus in favor of river transportation. Here are just a few examples: one hopper barge has a hauling capacity equalled only by 15 rail cars or 57 trucks. A harvest of approximately 1,100 acres of soybeans can be placed in one standard hopper barge for export movement.

But more impressive than the physical attributes of the industry, is the ability of its members to respond to dramatic increases in demand. This is due solely to the competitive nature of the industry where at times as many as 70 independent carriers are competing for the same bushel of grain. There is no such thing as a captive shipper in the river industry.

To illustrate the responsiveness of the industry, I ask you to consider the following. In 1973, the barge and towing industry moved 20 percent of all grain exports to oceangoing ports. By 1980, the river industry's market share had increased to 40 percent, or two billion bushels of grain. Not only did the industry double its market share in under seven years, it did so at a time when the market was expanding at a rapid pace. The industry built and placed in service the equipment needed to service this tremendous growth in demand.

The trend for growth in riverborne commerce is expected to continue at a dramatic pace through the year 2000. According to the Army Corps of Engineers' National Waterways Study and the Maritime Administration's recent Mid-America Port Study, it is projected waterborne coal traffic will triple between 1977 and 2003, with a doubling of overall inland waterborne commerce by the year 2000.

The Maritime Administration's study specifically shows an 80 percent growth in export grain movements by the turn of the century. And this projection could further increase based on the October 1980 grain agreement between the U.S. and the People's Republic of China. The agreement calls for the purchase of at least six million metric tons of grain annually from 1981 to 1984.

What I have tried to illustrate for you, is the overall effectiveness and operating efficiency of the inland waterway industry, as well as the major role the industry plays in support of American agriculture. However, looking to the future, it is becoming increasingly evident that the industry's ability to keep pace with projected demands, is being placed in serious jeopardy.

A number of vital issues must be resolved and serious constraints alleviated, if the industry hopes to retain its position as a major mover of export products. When considering these issues and constraints, it is imperative that policymakers consider the far-reaching implications of their decisions. The nation as a whole is dependent on a responsive transportation network to move commodities essential to our economic and strategic position among the world powers.

To achieve a balance of payments between costly petroleum imports and U.S. exports, the country must be able to move as much export grain as possible. To do this, all three major bulk transportation modes -- water, rail and truck -- must be used to their greatest level of efficiency. By hindering the waterways with unnecessary, thoughtless constraints, the economic stability of the country is left hanging in the balance.

The central question remains: will the river industry be allowed to do what it does better than any other mode, or will it be impeded by senseless constraints?

Let me outline several of the major hindrances plaguing our industry. The waterways system, and most importantly, the major shipping rivers such as the Ohio, Illinois, Mississippi and Snake-Columbia, are made navigable by a series of locks and dams. The majority of these river facilities were built in another era of transportation requirements. The Army Corps of Engineers does a tremendous job maintaining the locks, but the age and inadequate size of the structures demand more decisive steps be taken.

The Ohio River project for the most part, has not been modernized for over 40 years. The Gulf Intracoastal Waterway was expected to handle 5 million tons annually when built 75 years ago. Today, over 120 million tons pass through the system annually. But probably the most glaring of river bottlenecks is Locks and Dam 26 at Alton, Illinois.

For ten years, a group of Midwestern railroads and environmentalists delayed the construction of a replacement Lock and Dam 26, which enabled the severity of the problem to compound annually until it reached devastating proportions. During the heavy harvest shipping period, river tows are now delayed as much as 72 hours at the aged facility.

The facility's location is one of the major reasons for the backups. Because of its location at the confluence of two major shipping rivers, the Illinois and upper Mississippi, a tremendous volume of commodities must move through it. The problem is multified in scope due to the restrictive size of the present facility's main chamber, which is 600 feet long. A standard 15-barge grain tow must double lock to traverse the Alton facility, whereas the new 1200 foot lock, when completed, will handle the tow in one lockage.

Although some relief is in sight, with a replacement lock and dam already two years into construction, the project is still eight years from completion. Until the facility is completed, the situation will only worsen, especially in light of the projected increases in grain and coal exports.

Another fight surrounding Locks and Dam 26 has to do with the need for a second locking chamber at the new facility. Currently, Congress has approved funding for a single 1200 foot chamber. Projections show growth in river movements will cause the new facility to be operating at capacity by 1990, or shortly after it is first placed into operation.

To avoid future senseless delays, such as are being experienced now, the industry is fighting for the approval of a second 600 foot chamber at the new facility. The original plans called for a second chamber at the facility, but due to the railroad-initiated, decade-long delay in construction, approval for the second lock has not yet been granted. Increased costs has been cited as the reason.

The National Waterways Study has identified other facilities which have the potential to develop into troublesome bottlenecks, equal in severity to Locks and Dam 26. They include the Vermilion Lock on the Intracoastal Waterway; Gallipolis and Emsworth Locks on the Ohio; Winfield Lock on the Illinois; Bonneville Lock on the Columbia; and many others.

With a price tag of approximately \$800,000 for the Lock 26 project alone, there is always a battle for funding before any waterways project is authorized. The question which is inevitably asked when considering a major waterways project is always the same, who will pay the bill?

This leads us to two of the most pressing and controversial issues facing the river industry today -- user charges and modal equity. In President Reagan's most recent address to the nation on September 24th, he renewed his plea to Congress to approve his proposals for user fees. He specifically cited as an example, that in fiscal year 1982, the government will spend \$525 million to maintain river harbors, channels, and locks and dams for the barge and maritime industries.

As part of the President's Economic Recovery Program, he hopes to pass budget legislation which will recover a total of \$980 million from the users of these services through fees. He says this is only a third of the \$3.3 billion it will cost the government to provide those same services.

What the text of Mr. Reagan's speech did not contain is that specific, White House-sanctioned legislation already before Congress, calls for 90 percent recovery of all costs associated with the operation, maintenance and construction of the inland waterways, from commercial users. In other words, he has deemed the river industry responsible for all but 10 percent of the total cost of running the system.

This has left many of us in the industry scratching our heads, since another federal agency, the Army Corps of Engineers, recently published an entirely different conclusion. In a study of the three port areas of St. Louis, St. Paul and Pittsburgh, the Corps determined that at least 30 percent of all federal dollars spent on the waterways should be appropriated to accounts other than commercial navigation. In other studies sponsored by our own industry, conclusions show as high as 60.6 percent of all costs are not related to commercial navigation. Both the Corps' 30 percent and industry's 60 percent do not even closely resemble the President's conclusion. We still aren't sure how he arrived at the figure.

Additionally, the Administration has ignored the fact

that many waterways projects were authorized solely for the purpose of their benefit to regional development. As it stands, a host of other benefactors are escaping untouched under Reagan's plan. He apparently has forgotten about the benefits of flood control, stabilization of municipal water supplies, recreation, hydroelectric power, and a host of others, all of which are the direct result of waterways projects. But even more importantly, is the Administration's inability to recognize the benefits to the nation's economy, of a responsive, economical waterways system.

Any increase in user fees would have to be passed on to the shipper, which ultimately would affect the nation's position in world markets, as the price of our export products increase. Let me put this in perspective for you. The Congressional Budget Office says to fully recover federal costs, a user fee of \$1.30 cents a gallon would be needed. This is 217% higher than the present 6 cents a gallon tax.

Ultimately, the increase would be reflected in the price of the commodity being shipped. In terms of export grain, a \$1.30 cent per gallon tax could boost the shipping cost per bushel by approximately 20 cents. A standard 50,000 bushel barge load of grain would cost \$10,000 more to move.

Grain margins in the world market are often measured by a fraction of a cent. Add 20 cents and you run the risk of pricing the U.S. out of the market. At present, export grain sales are one of the few remaining strengths we can apply against costly oil imports. Do we really want to destroy one of the few competitive export edges we still enjoy? I think not.

When discussing increased user fees to waterways carriers, no forum is complete without relating the tax question to the second major waterways issue -- that of modal equity. This is something Ronald Reagan has pledged to each major mode. The President's promise was most recently reiterated by his Secretary of Transportation, Drew Lewis, at the September 17, 1981, National Waterways Conference in St. Louis. He said, and I quote:

"We are very aware that we must not disrupt your industry. The principle of cost recovery by user fee will be applied fairly and equitably. On that point you have my word. We will not tolerate a user fee system that discriminates. We know that you must be competitive. Barge, rail and other modes must be free to compete."

Those are rather reassuring words by the Secretary, but I cannot see them being backed up with a realistic approach.

Fact: The river industry is being singled out by the government in its efforts to fully recover all federal subsidies. The rail industry, which receives federal dollars in much greater sums, has not even been approached by the government to begin paying back the huge amounts of subsidies they have received.

A study by the Joint Economic Committee entitled, "Subsidy and Subsidy Effects on Programs of the Federal Government," demonstrates that every transportation mode is subsidized in one fashion or another. Rep. James J. Florio (D-N.J.), who is chairman of the transportation and commerce subcommittee of the House Interstate and Foreign Commerce Committee, discussed subsidy levels to the two major transportation modes, rail and barge, in the Congressional Record:

"As mentioned on numerous occasions, the federal government over the past five years has spent over \$11 billion in rail subsidies. The fair share of freight allocated costs of federal money on shallow draft barge would not exceed \$4 billion since 1824."

Again, that's \$11 billion paid to railroads in 5 years and \$4 billion to commercial navigation in 157 years. Yet, despite this glaring inequity, the government proposes to tax river carriers to recover federal dollars and not railroads. I sure hope Mr. Lewis doesn't forget his pledge of equal treatment to the modes, because if this is allowed to happen, the consequences to the river industry, shippers and the nation, could be disastrous.

The river industry is in favor on the positive and forceful approach the Reagan Administration is taking to try and turn the economy of this country around. But to unfairly apply a tax against the river industry, without applying the same measures to all modes, will not provide the President with the long-term solution he is seeking.

Our goal is to make the Administration aware of the potential pitfalls we have discussed here today. Hopefully, I have successfully demonstrated that agriculturalists, as well as barge operators, stand to suffer a great deal if waterways user fees of damaging proportion are initiated.

Thank you for your time.

Robert B. Phelps
Forest Service, USDA

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The demand for timber products is largely determined by the levels of activity in several important end-use markets. So before discussing demands for the various products, I would like to review briefly trends in these markets and take a look at current estimates of their strength this year and early in 1982.

Domestic Markets

As the third quarter of 1981 ended, most measures of economic growth were trending down with prospects for some further declines in the last quarter and only gradual improvement in 1982.

The gross national product, a measure of the Nation's total output of goods and services, and the most comprehensive measure of total economic activity, declined at an annual rate of 0.6 percent (measured in 1972 dollars) in the third quarter. This preliminary estimate represented a continuation of the decline in the second quarter and likely will be revised upward as more data become available. Although there is a wide diversity of views among economists regarding the extent and length of the current downturn, most expect some continued contraction in the last three months of 1981, and only slow recovery in 1982.

A key determinant of the demand for many timber products is construction activity, and most particularly residential construction activity. Housing is the Nation's most important market for softwood lumber and plywood, and a major end use for many other timber products such as hardwood plywood, particleboard, and insulation board. And not only is it a large direct consumer of wood, but it provides the stimulus for homeowner purchase of many manufactured goods, including household furniture, a major manufacturing user of hardwood lumber, plywood and veneer, hardboard and particleboard.

New housing activity--which in most recent years has accounted for more than 40 percent of U.S. lumber and plywood consumption--has been declining fairly rapidly through the first three quarters of 1981. In September new housing starts dropped to a seasonally adjusted annual rate of 918,000 units, down 1.7 percent from August and nearly 45 percent below the rate in January. The September rate, smallest in more than six-and-a-half years, also was the third lowest monthly level since 1959.

In addition to the declines in housing starts, building permits, an indicator of future housing activity, have also been dropping. Preliminary data indicate that the September seasonally adjusted annual rate was 844,000 units, down 2.4 percent from August and the smallest volume in well over a year.

As mortgage interest rates have risen and starts and permits declined in 1981, housing analysts have continued to revise their estimates for the year downward. Currently, most forecasters expect no appreciable turn-around in the last three months of the year and as a consequence are estimating starts for 1981 at 1.0 to 1.1 million units. A level of 1.05 million units would be 20 percent below construction in 1980 and only a little over half the number started in 1977 and 1978.

Most economists expect the adverse elements currently affecting the housing markets to continue into 1982. However, the extent and duration are a matter of some conjecture. Predicated on the probability of some improvement in interest rates, estimates for 1982 are for about 1.3 to 1.4 million units with the highest level of starts coming in the second half of the year.

Expenditures for residential maintenance and repairs and construction improvements declined on a seasonally adjusted basis in the first and second quarters of 1981. Alterations and additions showed particularly large drops. In the past, many homeowners have apparently met their needs for additional space by alterations and remodeling during housing downturns. However, high interest rates appear to be constraining borrowing for these types of construction as well.

Nonresidential construction activity has also been declining in 1981. Preliminary data indicate the seasonally adjusted annual rate of expenditures (measured in 1977 dollars) in August was about 96.7 billion dollars, 7.5 percent under the rate in January and 2 percent below expenditures in 1980. Although there has been a drop in the total, expenditures for private buildings, the most important wood using segment of nonresidential construction, has increased. On the other hand, public construction expenditures, especially for highways and streets, have declined.

The outlook for the coming months is somewhat mixed. The seasonally adjusted index of contracts for future nonresidential construction was following a downward trend at the mid-point of the third quarter. In contrast, business plans for new plant and equipment expenditures show increases for the last half of 1981. On balance, however, total new nonresidential construction expenditures seem likely to be relatively flat for the remainder of the year with further declines in public construction largely offsetting any increase in private expenditures. Some growth, particularly in the private sector can probably be expected in 1982 if the economy improves and interest rates decline.

The seasonally adjusted index of industrial output--an important indicator of the demand for pallet lumber, container board, and some grades of paper--dropped in August and September after growing slowly through the first 7 months of 1981. The September seasonally adjusted index was 152.1 (1967=100), down just under one percent from August, but about 3.5 percent above the average for 1980. Container production, a large market for paperboard and for some grades of lumber, followed similar trends. Some continued decline is probable in the final months of the year with increases in 1982 as economic growth improves.

Production of furniture and fixtures--an important market for hardwood lumber, plywood, and veneer and for particleboard and hardboard also increased through the first 7 months of 1981, and somewhat more rapidly than total industrial production. In July the index reached 164.9 (1967=100), almost 10 percent above the average for 1980, before dropping to 161.4 in August. Furniture and fixtures output will also likely continue to decline until economic growth and housing turns up.

International Markets

The United States is the world's leading importer of timber products--chiefly lumber, woodpulp, and paper and board from Canada and veneer and plywood from southeast Asia. The total value of these imports in 1980 was about \$8.6 billion, about 4 percent of the value of all U.S. imports. In terms of roundwood equivalent, more than a fifth of our apparent consumption of timber products has been imported in most recent years.

The United States is also a major timber products exporter. In 1980, the total value of timber product exports was about \$8.5 billion--some 3.5 percent of our exports. Although we ship a variety of wood products to many countries, our principal export markets are Japan for softwood logs and lumber, pulp chips, woodpulp, and paper and board products, and western Europe for woodpulp, paper and board products, and smaller amounts of lumber and plywood.

International demand for many U.S. timber products, which had been generally trending up in 1978 and 1979 began to decline in 1980 as economic growth slowed in our major overseas markets. These trends have continued in 1981. Particularly important has been the slump in Japanese housing, the principal market for most of the softwood logs and lumber imported from the United States. Also important has been the economic conditions in our major European markets and to some extent the strengthening exchange rate for the U.S. dollar. The outlook for international trade appears somewhat flat for the remainder of 1981 and consequently total wood products exports will likely be under the 1980 volume. International wood products specialists see a gradual improvement in 1982 if the economies of our major trading partners improve.

Timber Products Production, Trade, and Consumption

Softwood Lumber

In response to somewhat higher levels of housing starts early in the year, and some inventory building, softwood lumber production in the first 7 months of 1981 was about 4 percent above that of the same months in 1980. Although production data are not yet available for the third quarter of the year, lower demand because of declining housing production has caused many mill closings and sharply curtailed output. The outlook for housing discussed earlier holds little promise for sustained production increases in the last quarter of 1981, consequently production for the year is estimated at 21.1 billion board feet some 13 percent below the 24.3 billion board feet produced in 1980 and nearly a third under output in 1978 (Table 1).

Imports of softwood lumber, chiefly from Canada, are also likely to decline fairly rapidly late in the year, but overall to be up about 2 percent to 9.8 billion board feet in 1981, primarily because of the continuing effect of currency exchange rates, and the high levels of imports early in the year. In contrast, exports are expected to decline to 1.9 billion board feet, about 5 percent below the volume exported in 1980.

Table 1.--Wood products production, consumption, and trade
(1978, 1979, and 1980 actual, 1981 projections)

Product	Year	Domestic production	Imports	Exports	Apparent consumption
Softwood lumber (billion bd. ft.)	1978	31.3	11.9	1.4	41.8
	1979	30.4	11.2	1.8	39.8
	1980	24.3	9.6	2.0	31.9
	1981	21.1	9.8	1.9	29.0
Hardwood lumber (billion bd. ft.)	1978	7.0	.4	.4	7.0
	1979	7.3	.4	.4	7.3
	1980	7.3	.3	.5	7.1
	1981	6.9	.3	.5	6.7
Softwood plywood (billion sq. ft., 3/8-inch basis)	1978	19.5	.1	.3	19.3
	1979	18.6	<u>1/</u>	.4	18.2
	1980	15.7	<u>1/</u>	.4	15.4
	1981	16.5	<u>1/</u>	.5	16.0
Hardwood plywood (billion sq. ft., 3/8-inch basis)	1978	1.2	2.5	<u>1/</u>	3.6
	1979	1.1	2.1	<u>1/</u>	3.2
	1980	1.1	1.2	<u>1/</u>	2.2
	1981	1.0	1.3	<u>1/</u>	2.3
Particleboard <u>2/</u> (billion sq. ft., 3/4-inch basis)	1978	4.4	.2	.1	4.5
	1979	4.1	.2	.1	4.2
	1980	3.5	.3	.1	3.7
	1981	3.6	.3	.1	3.8
Hardboard (million tons)	1978	2.4	.3	<u>3/</u>	2.7
	1979	2.3	.3	<u>3/</u>	2.5
	1980	2.0	.2	<u>3/</u>	2.1
	1981	2.1	.2	<u>3/</u>	2.3
Insulation board (million tons)	1978	1.4	.1	<u>3/</u>	1.5
	1979	1.3	.1	<u>3/</u>	1.3
	1980	1.1	<u>3/</u>	<u>3/</u>	1.1
	1981	1.1	<u>3/</u>	<u>3/</u>	1.1
Pulpwood (million cords)	1978	80.1	1.7	3.1	78.7
	1979	86.2	1.4	3.8	83.8
	1980	86.7	1.6	3.7	84.6
	1981	88.0	1.5	2.9	86.6

1/ Less than 50 million.

2/ Includes medium density fiberboard.

3/ Less than 50 thousand.

Note: The projections presented for 1981 are based on the trends in the major markets discussed in this paper and should not be viewed as forecasts of actual volumes. Data presented are subject to rounding.

Based on the estimates of production, imports, and exports discussed above, apparent consumption (i.e., production plus imports minus exports) in 1981 is estimated at 29.0 billion board feet--about 9 percent below 1980. Much of this decline is attributable to decreased use in residential construction. If housing construction improves as outlined above, and the other major markets perform as discussed earlier, consumption is likely to increase in 1982. Production, imports, and exports are also expected to rise.

In response to declining demand, softwood lumber prices have trended down through the first three quarters of the year. By September the producer price index for softwood lumber had dropped to 335.2 (1967=100) about 3 percent under the average for 1980 and nearly 12 percent below 1979 (Table 2). Trade reports indicate a continuation of declining prices in October, however, the prices for most species and grades are likely to increase in 1982 as demand moves up.

Hardwood Lumber

Because of relatively higher levels of activity in some of its major markets, particularly in the first half, both orders and shipments of hardwood lumber through the first three quarters of 1981 were above the similar period in 1980. Production was down, however, as many mills apparently were attempting to bring down high inventory levels. As a consequence of these trends and the likely slow markets in the last three months of the year, production for 1981 is estimated at 6.9 billion board feet--5 percent under 1980.

Hardwood lumber imports in the first half of 1981 were also slightly below those in the first half of 1980, and little strengthening is expected in the last half. The total for the year is thus estimated at 0.3 billion board feet, close to the same volume as in 1980. In contrast to imports, first half data show exports slightly above year-earlier levels. However, such trends are not likely to continue and the year's total is expected to be near the 0.5 billion exported in 1980.

Apparent consumption of hardwood lumber in 1981, based on the estimates of production and trade given above, should amount to about 6.7 billion board feet, 6 percent below 1980. Actual consumption, however, may be slightly larger if mills continue to ship from inventories. Anticipated growth in the important hardwood markets suggests the likelihood of some rise in consumption in 1982, particularly later in the year.

In contrast to softwoods, hardwood lumber prices, as measured by the producer price index, have shown a small increase in 1981. Prices in September (index value 257.5, (1967=100)) were about 3 percent above those in January. Some further increase can be expected in the last quarter of 1981 and particularly in 1982 if demand picks up as expected.

Softwood Plywood

According to data from the American Plywood Association, total production of softwood plywood was up sharply in the first 8 months of 1981. However, this increase was in contrast to the depressed production levels during the comparable period in 1980. In addition, mill inventories were somewhat higher through most

Table 2.--Producer price indexes for selected wood products

(1967 = 100)

Product	1979 annual	1980 annual	September	
			1980	1981
Softwood lumber	380.0	345.1	349.4	335.2
Hardwood lumber	260.0	252.0	247.8	257.5
Softwood plywood	322.3	308.8	326.6	294.6
Hardwood plywood	169.1	176.6	176.3	185.0
Particleboard <u>1/</u>	139.6	156.1	169.8	166.7
Hardboard <u>2/</u>	164.7	187.4	191.5	226.1
Insulation board	198.8	208.1	215.1	243.4

1/ Corestock.2/ Type II, 1/8-inch.

Source: U.S. Dept. Labor, Bureau of Labor Statistics.

of the year than in 1980. Although reports late in the third quarter show many mills either closed or curtailing production, it is likely that total output for the year will be up somewhat because of the relatively high levels of output in the first half. Softwood plywood production is, therefore, estimated at 16.5 billion square feet (3/8-inch basis) for 1981, about 5 percent above 1980.

Softwood plywood exports, which have been slowly increasing since 1977, continued up in 1981 and are expected to total near 0.5 billion square feet, nearly a fourth above the volume in 1980. Imports will remain relatively insignificant.

With these levels of production and trade, apparent softwood plywood consumption in 1981 is expected to total about 16.0 billion square feet. Part of the rise is due to increased penetration into nonhousing markets. Actual consumption may be less, the difference going into inventories. The projected increase in housing and other markets in 1982 should result in increased consumption.

The producer price index indicates that softwood plywood prices have declined somewhat in 1981. The September index--294.6 (1967=100)--was below the index for both 1980 and 1979. Some rise is likely in 1982 as demand increases.

Hardwood Plywood

Hardwood plywood production is expected to total about 1.0 billion square feet (3/8-inch basis), down somewhat from output in 1980. However, data through July indicate that imports are likely to total about 1.3 billion square feet in 1981, up some 8 percent from the depressed level in 1980. Exports are expected to remain relatively small.

Given these trends in production and trade, apparent consumption of hardwood plywood in 1981 is estimated at 2.3 billion square feet, about 5 percent above 1980. With the declines in housing expected in the last quarter, actual consumption may be somewhat less. Some further increase is probable in 1981 if the important markets follow the trends discussed earlier. As in most recent years, about three-fifths of total consumption will likely be supplied from imports.

In contrast to softwood plywood, hardwood plywood prices have continued up in 1981. In September the producer price index was 185.0 (1967=100) about 7 percent above the index in January. Some additional rise in prices can be expected in 1982 as demand for houses and manufactured goods increases.

Particleboard

Particleboard production (including medium density fiberboard) in 1981 is expected to be up about 3 percent to 3.6 billion square feet (3/4-inch basis). Data for the first 7 months of the year indicate that imports are likely to be about 0.3 billion square feet and exports 0.1 billion. Both volumes are about the same as in 1980. Given these estimates, apparent consumption will amount to about 3.8 billion square feet, also up 3 percent. The largest percentage

increase in consumption and production is expected to be for medium density fiberboard, a product that has been growing in use in manufacturing markets. The expected improvement in housing construction in 1982 as well as growth in manufacturing should contribute to rising production and consumption.

Hardboard and Insulation Board

Hardboard production in 1981 is estimated at 2.1 million tons (6.3 billion square feet, 1/8-inch basis), about 7 percent above 1980. Imports are expected to total 0.2 million tons the same as in 1980, and exports remain relatively small at just under 50 thousand tons. Apparent consumption with these estimates of production and trade would amount to 2.3 million tons. Actual consumption may be smaller.

Data for the first half of 1981 coupled with estimates of current market conditions indicate that insulation board production for the year will total about 1.1 million tons (2.7 billion square feet, 1/2-inch basis). Imports and exports are expected to be under 0.1 million tons. Therefore, apparent consumption is also estimated at 1.1 million tons, the same volume as in 1980. Actual consumption may be somewhat smaller. If housing and manufacturing follow the trends outlined earlier the demand for hardboard and insulation board are expected to rise in 1982.

Pulpwood

According to data from the American Paper Institute, the seasonally adjusted rate of paper and paperboard production through the first 8 months of 1981 was about 65.7 million tons, 2.5 percent above output in 1980. Production of wood-pulp--which currently constitutes about 77 percent of the raw materials consumed in U.S. paper and board mills--was nearly 4 percent above the 1980 total. Industry data coupled with the general economic outlook for the remainder of 1981 indicate some slowing in the last quarter. Nevertheless, woodpulp production and consequently pulpwood consumption is expected to be above the 1980 total. Given the trends outlined above, pulpwood production in 1981 is expected to rise about 1 percent to 88.0 million cords.

Imports of pulpwood are expected to total about 1.5 million cords and exports approximately 2.9 million cords. These volumes are, respectively, about 6 percent and 22 percent below 1980. Nearly all of the decline in exports is likely to be in shipments of pulp chips to Japan.

Apparent consumption for all of 1981, given the above estimates of production and trade, amounts to 86.6 million cords, 2 percent more than in 1980. Prospective trends in the economy suggest some further increase in 1982, although consumption could be relatively flat until conditions improve after the first quarter.

Softwood Log Trade

Softwood log exports, 85 percent to Japan, during the first 7 months of 1981 were far below the levels attained in the same period in 1980. Reports from Japan indicate that a little increase is likely during the remainder of 1981, but that volumes will remain at relatively low levels. Exports for the year, therefore, have been estimated at 2.1 billion board feet, 32 percent under shipments in 1980. The outlook for 1982 is for a small rise. Imports of softwood logs have not changed much and are expected to total about 0.1 billion board feet in 1981.

Hardwood Log Trade

Hardwood log exports for 1981 are estimated at 0.2 billion board feet. Although the volume is small, most of the hardwood log exports in 1981, and in recent years, have been composed of walnut and other preferred species that are in short supply in the United States. These exports have thus been an important contributing factor to the large increase in stumpage and log prices for some domestic species.

Hardwood log imports in 1981 are expected to be close to the 1980 volume of 13 million board feet.

Fuelwood

Although analyses have not been completed, preliminary results from a current Forest Service survey of fuelwood consumed for domestic heating and cooking, and from various State and industry studies indicate that there have been large increases in the consumption of fuelwood in the last few years. Apparently most of the wood being used for domestic purposes is produced by the consumers themselves from urban areas, and from fence rows, dead trees and other similar sources not normally drawn upon as sources of industrial timber. Most of the growth in use by the forest industries has come from increased utilization of logging and mill residues.

Because most of the growth in fuelwood use has come from such sources, so far there has been no significant impacts on industrial products such as pulpwood. This may reflect, in part, the generally depressed demand situation. If the use of fuelwood continues to grow, it will undoubtedly begin to affect other products and especially so when the demands for these products rises.

Summary

Given the trends in consumption, trade, and production for the various products discussed earlier, U.S. production and consumption of all roundwood products, including an estimated increase in fuelwood, is expected to be sharply under 1980 levels. Total imports and exports, including the pulpwood equivalent of pulp, paper and board also will be down. Some rise in consumption, imports, and production can be expected in 1982 if the various markets, particularly housing, behave as discussed earlier. Exports also will likely show a relatively small increase.

Although the outlook in most of the important markets for timber is generally flat to down for the months immediately ahead and for only a relatively small rise in 1982, the longer run outlook is one of more rapid growth. The demand for housing, for example, is expected to reach about 2.5 million units by the late 1980's. Projected increases in population and income in the 1980's and beyond also suggest continued and substantial growth in the container and non-residential construction markets and in the demand for paper products.

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Speakers in Sessions 27 and 30 addressed key components of production potential: Resources and technology. The purpose of this session is to address another aspect of production--productivity--and to bring all these pieces to bear on overall production potential and constraints on that potential.

"Productivity" in agriculture means many things to many people. To some it means "how much can we produce?", i.e. production capacity. To others it means crop and livestock yields. To still others it is a measure of either economic or technical efficiency; i.e., the ratio of output to inputs. Since all these understandings reflect legitimate issues and concerns and since they are all related to the topic of this session "Potential for Growth," I propose to address them all.

First, why is production potential an issue? For over half a century the focus of agricultural concern has been on adjustments to supply growing faster than demand and the accompanying problems of excess resources, low farm product prices and low incomes. But, the decade of the seventies was a period of dramatic change. Exports shifted to a plateau beyond any forecasts made earlier. United States agriculture became truly internationalized. In other words, more and more of our production was for foreign markets, the rest of the world became increasingly dependent on us for their food supplies, and as the residual supplier, we experienced the ups and downs--the price volatility--of any residual supplier. As a result, we gradually came to think more in terms of how to protect domestic producers from that volatility than in terms of income supports per se. These developments have had their positive impacts: an improved agricultural balance of trade, more efficient use of our agricultural plant capacity; and stronger farm income and product prices than otherwise would have prevailed. Moreover, the full employment of agricultural resources has restored supply and demand equilibrium and enabled the Federal government to largely withdraw from artificially supporting farm incomes and commodity prices and restore the function of price-making to the market place.

But, a controversy has arisen about prospects for increasing world food production and the implications for real food costs worldwide, the possible abuse of our natural resources and degradation of our physical environment. That controversy stems from a scenario--not a prediction, but a scenario--which projects trends and developments of the past 10-15 years into the next decade or two, and adjusts those trends for available information about likely population changes, emerging technology and supplies and costs of additional land and water. Such an exercise can result in a credible scenario where effective demand is increasing faster than productivity, real agricultural and food prices are rising sharply to bring in increasingly costly and less

productive land and water resources, and a host of spinoff concerns are generated, especially those having to do with stewardship of our natural resources. Moreover, given the increasing share of United States agricultural sales going to fill a residual world food need, the path toward those scenario outcomes would likely be characterized by volatility in demand and prices, alternating gluts and shortages, consequent confused price signals to producers and the accompanying inefficient use of resources.

There are three crucial assumptions to this scenario. One is that effective world demand will be strong and increasing; another is that the economic supply function for additional land and water will turn up sharply (i.e., the world has used most of its inexpensive and easily accessible land and water, and additional supplies will be much more costly to bring in); and the third is that gains in yields and overall productivity will grow more slowly than in, say, the 1950's and slower than increases in demand.

It is beyond the purpose and scope of this paper to examine this whole scenario. Research is now underway in USDA and elsewhere to examine production prospects in the rest of the world and what those prospects imply for likely future demands on U.S. agriculture. While there is widespread opinion that export demand will continue to grow, there is considerable uncertainty about the likely rate of growth in the 1980's and the patterns of that growth--geographic patterns, commodity mix and timing. On the latter point, for example, some suggest that for a mix of reasons, demand growth for U.S. agricultural products in world markets could be rather modest in the first half of the 1980's but stronger in the latter half.

The purpose of this paper is to examine the potential for growth in agricultural production in the United States.

At this point it is useful to distinguish among three frequently confused terms: production (actual output); productive capacity (potential output); and productivity (output per unit of input--a measure of efficiency). When we talk about potential for growth we are really talking about productive capacity or growth in potential output: i.e., what could we produce. Productive capacity is a product of the resources available and the productivity of those resources. Obviously capacity can be changed over time by changes in technology--which effect productivity--and by adding to the resource base. Actual production will depend, weather aside, on the resources actually employed, and that in turn depends on economic incentives. The question for today is "What is our potential productive capacity, considering both future resources available for production and their likely productivity?".

RESOURCE SUPPLY PROSPECTS 1/

Cropland Supply

There has been much controversy and confusion over prospective cropland supplies, how much potential additional cropland exists, what will be the costs and problems associated with bringing that cropland into production,

1/ Portions of this section draw heavily on "Agriculture's Production Potential" by Kenneth Clayton and Austin Fox in Agricultural-Food Policy Review, AFPR-4, ESS, USDA, April 1981, and on material provided by Tom Frey, ERS, USDA.

how much cropland we are losing to urban development, etc. The details of this controversy can be found in a number of published studies. Here are the facts and highlights of this situation, as best they can be sorted out.

Cropland used for crops totaled 390 million acres in 1981 (Table 1). This is somewhat more than one-third of all the land in farms and ranches and about one-sixth of the land area in the United States. This figure includes 353 million acres of cropland harvested, 7 million acres of crop failure, and 30 million acres of cultivated summer fallow. Of the 353 million acres of cropland harvested, 13 million acres were double cropped. The 390 million acres used for crops in 1981 is the largest ever and exceeds by 3 million acres the previous record, which was set in 1949.

Traditionally, most acreage harvested has been used to produce crops for domestic consumption. From the thirties to the late fifties, 85 to 90 percent of the crops harvested annually were for domestic use and the remaining 10 to 15 percent were for exports. Since the late fifties, however, the acreage harvested for exports has increased greatly. In 1981, about 38 percent of all acreage harvested was for crops destined for foreign markets.

The acreage used to produce crops and livestock for domestic use has remained rather stable since the early 1960's (averaging around 235 million acres and ranging from 221 million to 246 million acres) as productivity gains have about matched growth in domestic consumption.

Cropland used for crops has increased in the Cornbelt and Delta States, declined in the Northeast, Appalachia, Southeastern and Southern Plains regions, and remained fairly constant over the past 30 years in the Lake States, Northern Plains, Mountain and Pacific regions. Increases in cropland in the Delta have come primarily through drainage and land clearing while in the Cornbelt the increase has come primarily from conversion of pastures to cropland and scattered wetland conversion. Working against these increases has been a persistent withdrawal of land, some of it cropland and potential cropland for urban and nonfarm uses (up to 1 million acres per year, but with half or less from cropland).

How much additional cropland and noncropland can be converted to cropland used for crops? In 1977, the Soil Conservation Service (SCS) estimated that 36 million additional acres of pasture, range and forest land was high potential cropland and another 91 million acres were medium potential cropland. The convertability of noncropland depends on large measure on its present use and ownership patterns. Some available pasture and range land requires only plowing. Forested land may require costly removal of trees, stumps, roots, etc. Of the land considered high potential cropland in 1977, about three-fourths was in pasture and range land, nearly 20 percent in forest and the remaining 5 percent in other rural uses.

Much of the land that could be converted to cropland has limitations on its use and will require special management practices. For example, land with an erosion hazard may require terraces, strip cropping, or minimum tillage to prevent deterioration of the soil. Land with a drainage problem may require

Major Uses of Land, U.S., 1949-81

Land use	: 1949	: 1959	: 1969	: 1974	: 1978	: 1981
	:	:	:	:	:	:
	:					
	:					
	:					
	:					
*Crops harvested	360	324	290	328	337	366
(double cropped)	(8)	(7)	(4)	(6)	(6)	(13)
Cropland harvested	352	317	286	322	331	353
Crop failure	9	11	6	8	7	7
Cultivated summer fallow.....	26	31	41	31	31	30
Cropland used only for pasture..:	69	66	88	83	76	NA
Idle cropland	22	33	51	21	26	NA
Total cropland <u>1/</u>	478	458	472	465	471	NA
Pasture and range <u>2/</u>	632	633	604	598	587	NA
Forest land <u>3/</u>	721	728	723	718	703	NA
Special use areas <u>4/</u>	119	123	141	147	158	NA
Other land <u>5/</u>	323	329	324	336	345	NA
Total land area <u>6/</u>	2,273	2,271	2,264	2,264	2,264	NA
*Crops harvested for:	:	:	:	:	:	:
domestic use	315	263	229	229	224	228
exports.....	45	61	61	99	113	138
Total	360	324	290	328	337	366

1/ All land in the crop rotation.

2/ Permanent grassland and other nonforested pasture and range.

3/ Excludes 33 million acres of reserved and other forested areas duplicated in special-purpose uses.

4/ Rural transportation areas, areas used primarily for recreation and wildlife purposes, various public installations and facilities, farmsteads, and farm roads

5/ Includes urban areas, miscellaneous uses not inventoried; and marshes, open swamps, bare rock areas, desert, tundra, and other land generally having low value for agricultural purposes.

6/ Includes streams and canals less than one-eighth mile wide; and ponds, lakes, and reservoirs covering less than 40 acres.

Estimates are based primarily on reports and records of the Bureau of the Census and Federal and State land management and conservation agencies.

Table provided by Tom Frey, Natural Resources Division, ERS, USDA.

ditches or tilling to be cropped. Soil problems such as hard pan and rocks may require special preparation for tilling. Alkalinity may have to be contended with in certain semi-arid areas where submarginal water supplies can be overcome only by supplemental irrigation.

Of the high potential cropland only 6 percent had no major limitations on use. Well over half was subject to serious erosion and another fourth would require drainage. Soil and climate problems limit use of the other 15 percent.

Overall, the most likely sources of additional cropland seem to be in the Cornbelt and Delta regions, the locations of much of our new cropland in recent years. This land would likely be used to produce corn and soybeans. The Northern Plains and Southern Plains have considerable amounts of high potential acreage but it is mostly in areas of marginal rainfall and would be best suited to wheat and sorghum production. Much of the increased wheat production would require the development of two acres to get one acre of harvested wheat, the other acre being in cultivated summer fallow. High potential land in the remainder of the country would either require considerable investment in clearing, draining or irrigation or would be relatively low yielding under dry land farming in semi-arid areas. As a consequence, only a small portion of the potential cropland is likely to be converted to cropland use in the near future unless the cost price relationships for crop production improve.

These data suggest that the supply of additional cropland may be rather limited, but that is misleading. Most of these considerations implicitly, if not explicitly, assume price and cost relationships as we have known them in recent years. The fact is that there are many millions of acres of high, medium and low potential cropland which can be and will be brought into production if the economic incentive is there. The question then is how much incentive is needed to bring in successive increments of land. Economists refer to this as the supply function for land, the relationship which depicts how much land will come into use at alternatively higher real commodity prices.

We do not know what the economic supply function for additional land looks like. Clayton and Fox used some data based on SCS conservationists' opinions of the feasibility (physical and economic) of converting noncropland to cropland in two different years with very different price conditions to estimate a crude supply function. Those data suggest that with a ratio of prices received by farmers to prices paid by farmers of 120 (1967 = 100), an additional 70 million acres would come into production. However, those relationships were derived from a historical period in which there were always excess acres which could easily be brought into production. It is likely that this supply relationship greatly overstates the future responsiveness of farmers to land conversion incentives.

Why is it important to know the supply response function for land? After all, the market place equates supply and demand, and market forces primarily, not government policy, will bring in whatever land is needed to meet the demand at the equilibrium price. The reason it is important to know more about the shape of that economic supply function curve for land is that it does have important consequences for farmers, use of natural resources, consumers and consequently for public policy. If that supply function is relatively flat, in other words, if small real price increases bring in large additional acreages, then we can meet growing export demand with only

modest domestic and international impacts. However, if not too far beyond our present cropland acreages, the supply function turns up sharply (i.e., much higher returns are needed to draw additional land) then the high cost of additional production means that additional food will be produced only if prices are very high. Conversely, strong world demand will bring forth very high domestic and international commodity prices which will generate a host of ripple effects throughout both the agricultural and general economies of this and other nations.

It should be noted that the supply potential for land is not the same as the supply potential for agricultural output. Higher prices not only attract more land into production but they also attract more intensive land use and changes in productivity. We will turn to that subject shortly.

Potential Water Supplies

About 25 percent of the value of all crops now produced in the United States is from irrigated production involving about 12 percent of all cropland. The use of irrigation expanded by between 1 million and 1.5 million acres per year over the last half of the seventies. Irrigated acreage rose steadily from 18 million acres in 1939 to over 41 million acres in 1974. Estimates of irrigated acreage in 1980 ranged from 45 million to 60 million acres. Nearly 90 percent of the total irrigated acreage is located in 17 western states.

Until the sixties, sprinkler irrigation was used almost exclusively on high cash value crops such as tree fruits, berries, vegetables, tobacco, nursery stock, flowers and turf. Since then, sizeable acreages of corn, peanuts and soybeans have been brought under irrigation in the east through the use of mechanical move systems. A more recent phenomena is the development of supplemental irrigation in the eastern half of the United States to reduce variability in crop yields.

Agricultural use of water accounts for nearly 80 percent of all water consumed annually in the United States. Competition for water for nonfarm uses will probably increase in the eighties. Conflicts will be inevitable where scarce water supplies are insufficient to meet all demands. Competition for water can be expected to become even keener as coal and oil shale development increases. Shifts in the population to the south and southwest will also cause increased competition for fresh water supplies.

Urbanization on previously irrigated cropland in the west, increasing urban and industrial competition for water supplies, rising pumping costs, declining water tables in some regions, and rising public concern about water conservation all suggest that development of additional water supplies seems likely to slow in the eighties. What development does take place is likely to be with private funding as public development of water supplies for irrigation will be limited. The focus could shift to increased water recovery and efficiency in use of irrigation water.

Increased irrigation has been a major contributing factor to increased productivity and total output from the cropland base over the past three decades. That particular source of increased output is likely to be more limited in the future although if the economic incentives are there, there will certainly continue to be additional irrigation development as well as improved efficiency in the use of present irrigation water supplies.

Supplies of Other Resources

Increased use of fertilizer, pesticides and other chemicals has contributed greatly to increased output and productivity per acre since World War II. The dramatic yield increases resulting from these inputs have likely been largely realized. However, application rates of both fertilizers and pesticides are expected to continue to grow through the eighties and they will be applied to expanded acreages. While prices of all these inputs are likely to increase somewhat, it is expected that they will continue to be economical to use in expanded quantities. Furthermore, domestic and worldwide supplies appear to be sufficient so as to not pose any significant constraints on production in the decade ahead.

For most of the period since the 1930's, credit has been relatively abundant at relatively low costs. However, that situation has recently changed and in the decade ahead there is likely to be strong competition for available supplies of loanable funds. While interest rates are not likely to continue at present levels they are likely to average considerably higher than levels prevailing in the fifties and sixties. The higher cost of capital simply becomes an increased cost of production and in economists' terms shifts the supply function to the left. This means that for a given commodity price, there will be less supply forthcoming, or, conversely, higher commodity prices will be required to sustain a given output level.

AGRICULTURAL PRODUCTIVITY 2/

Production capacity will increase whenever either the available resources increase or the productivity of those resources increase. Actually those two variables are not independent. The quantity and quality of resources employed influence productivity changes. For example, if we increase corn acreage onto less and less fertile lands or in regions less suited for corn, we may increase production but decrease productivity.

Productivity Trends

What has happened to agricultural productivity in the United States and what are the prospects for the future? First I should point out that there are two types of productivity measures that we in ERS are responsible for producing and reporting: single factor productivity (the ratio of total production to input of a single resource); and total factor productivity (the

^{2/} Portions of this section draw heavily on "Productivity in U.S. Agriculture," an ERS Staff Report by Kenneth R. Farrell, and on productivity research by Lloyd Teigen, ERS, USDA.

ratio of total output to total inputs). Actually, we develop indices of total crop production, total livestock production, and, after adjusting for corn fed to livestock, total agricultural production. Similarly, we develop indices of all inputs used in the production process. Our total factor productivity measure is, then, the ratio of the index of total farm output to the index of total farm input.

The details of how these indices are constructed, what is included in them, and their limitations are provided in several ERS publications. ^{3/} Time does not permit their discussion here.

Examination of agricultural productivity growth in the United States over the past 200 years reveals a remarkable history as well as insight into why Mr. Malthus' predictions of doom have not yet come to pass. Over this period the predominant technology evolved from one which was powered by people to an animal-powered technology, to one powered by machines. Today the growth of agricultural productivity is governed by the sciences--genetics, chemistry, biology--and by management.

Figure 1 illustrates these historical changes. In each succeeding period the rate of productivity growth has accelerated, from a growth rate of less than one-half percent per year, in the early years, to nearly four times that rate today.

Figure 2 presents the trends of this measure since World War II. The data here suggest no sustained departures from a linear trend in this period, although there was more variation in the seventies. On a point-to-point basis there appears to have been a slight decline in productivity over the past three decades. But when the data are broken into 5 year intervals there is no clear trend.

These aggregate measures mask some changes that are taking place. Figure 3 shows that crop production per acre has continued on its post-World War II trend, with some variations that are mostly weather-related. However, livestock output per breeding unit declined dramatically after 1972, probably in response to high feed prices (Figure 4). The recovery of overall livestock productivity after 1976 does not tell the full story. In each year from 1975 to 1979 the calving rate remained below 90 percent. This had happened only once before in the previous 25 years. The aggregate livestock productivity is increasing only in response to sharp increases in productivity of other livestock sectors such as dairy and poultry.

There are significant geographic differences in crop productivity trends. The Midwestern and Western States which produce the bulk of crop output show trends of increasing productivity. In contrast, crop production per acre in

^{3/} USDA-ESS. Economic Indicators of the Farm Sector: Production and Efficiency Statistics, 1979; Stat. Bul. No. 657, Feb. 1981, and Kenneth R. Farrell, "Productivity in U.S. Agriculture," ESS Staff Report, April 1981.

the states south and east of the Ohio River (including the Delta States) has not increased significantly since 1965. The increased cultivation of marginal lands is the primary reason why productivity has not increased in these latter regions.

Corn and soybeans have been especially important contributors to the growth in crop sector productivity. Corn yields now are more than two and a half times higher than in the early fifties. But the gains in productivity are not equally distributed. Corn yields in Illinois, for example, have continued upward with the national productivity trend, while yields in North Carolina and the Southeast generally have leveled off since 1965. The same story is illustrated even more dramatically for soybeans. In fact, there appears to be a trend toward lower soybean yields in North Carolina, for example, apparently reflecting the increased planting on lower quality land. Wheat, cotton, and rice yields show a similar pattern, with little or no increase in yields in the Delta States or Texas.

In the livestock industry, productivity gains take many forms: improved feeding efficiency (fewer pounds of feed per pound of gain), reproductive improvement (more pigs per litter), increased labor efficiency (fewer hours per milk cow), or better facilities utilization (year-round farrowing operations). The growth of the large confinement-type broiler "factories", made possible by antibiotic feed additives, is responsible for the phenomenal growth (better than 5 percent a year) in total ready-to-cook pounds of chicken produced per laying hen (Figure 5). Similar forces have enabled egg production per hen to increase at the rate of 1 to 2 percent per year. In the dairy sector, productivity increases have averaged 2.9 percent per year as a result of selective breeding programs and greater use of high energy feed rations (Figure 6). The development of confinement facilities in the pork industry enabled producers to moderate the seasonal pattern of production by allowing fall farrowings to increase. The result of this change was to increase the annual pig crop per brood sow. In the cattle industry, the major innovation affecting productivity has been large-scale feeding operations which combine high-energy feed rations with a capital intensive operation to reduce both the growout time and the hours of labor required to produce beef. The prospect of twinning beef cattle is on the horizon to improve reproductive efficiency, but the liquidation phase of the cattle cycle has had greater effect on the overall calving rate than the technological improvements to date.

It should be noted that poor performance in other sectors of the economy may have had a negative impact on productivity in the farm sector. Productivity in the manufactured inputs industries has grown slowly, resulting in those inputs being more costly to farmers. On the marketing side, productivity in food transportation, processing, and distribution--especially distribution--has grown slowly in recent years and in some cases actually declined. The result is higher marketing costs and less of the retail food dollar returned to the farmer. The lower farm returns resulting from the higher input costs and lower product prices likely reduced the incentives for adding the quantity and quality of inputs which would have further increased crop production per acre and livestock output per breeding unit, although the impact on total factor productivity is unclear. This continuing poor productivity performance of sectors on both ends of the farm sector should be of concern to farmers and policymakers.

Factors Influencing Productivity

A number of factors will influence productivity in the future. The quantity and quality of resources are obviously important. Past increases in crop yields per acre can largely be explained by greater use of fertilizer, agricultural chemicals, improved seed, and irrigation water.

Price and cost relationships affect the mix of commodities grown and the rates at which the various inputs are used. Both prevailing prices and producers' expectations of future prices enter these decisions.

Regulations and policies will continue to affect productivity. Some policies, such as investment tax credits, for example, may actually lead to improved productivity. Numerous other regulatory requirements of EPA, OSHA and others have increased private costs without increasing output. Often the productivity impacts of new regulations and policies are side effects not recognized until after the fact.

Technology is the other factor which will affect productivity growth in the future. Research and development have led to the introduction of hybrid corn and sorghum, have resulted in mechanical harvesting systems for many commodities, and have developed the veterinary medical means which permit raising large populations of fed cattle, hogs and poultry in confinement facilities. Scientific research can lead to increased efficiency of the photosynthetic process of plants, biological fixation of nitrogen, and twinning in beef cattle. Many problems still exist: high-priced energy inputs call for the development of energy efficient technologies; and the stagnation of corn and soybean yields in the Southeast call for research on adaptive varieties and disease and pest control techniques.

But research and new technology alone will not guarantee increasing productivity in the future. Farmers must have the necessary information to evaluate, and the economic incentive-profit-to adopt the new technology. Hence the stake of all food consumers in effective public and private research programs and information systems and a profitable agriculture.

What are the likely future productivity trends? The evidence is not clear. Personal inquiries in recent months in Iowa, Missouri, and Illinois led me to believe that the gap between practices and yields of "leading" corn growers and "average" corn growers is now much narrower than in earlier years and narrower than in the Southern states for example which are less important in corn production. This suggested to me a diminished potential for continuing increases in corn yield from "closing the gap." But, offsetting my hypothesis are the data which show corn yield increases in those and other Midwestern states leading the nation while yields in the Southern States remain flat.

But, the lack of clear evidence on future trends does not diminish the importance to the nation of continued productivity growth in agriculture. Without productivity increases or with productivity increasing less than demand, there will have to be real increases in agricultural prices and hence food prices to draw forth the needed production. That increased production will come from expanding the land base onto less productive, more costly land

and from adding more nonfarm inputs to all land used. There could be higher farm income, but at the expense of a redistribution of wealth from the nonfarm sector to the farm sector. This would be a reversal of trends of this century in which the cost of food has been a declining share of disposable income for most Americans, paving the way for the phenomenal increases in standard of living as measured by the things we can buy after satisfying the basic necessities of life. Moreover, inflationary pressures would be increased.

But, if agricultural productivity would increase faster than demand for food, we could, with appropriate policies to provide a stable economic setting, have rising real farm incomes, competitive returns to investment in agriculture, reduced inflation, and reduced pressure on our resources and natural environment, while still providing food to Americans and to the rest of the world at declining real costs, thus sustaining the trends toward continued improvements in standards of living.

Simply put, that is the crucial stake America and the world have in improved agricultural productivity.

Summary

A summary observation: We have yet to seriously scratch the surface of our production potential. With modest incentives there is considerable potential for expanding our resource base and improving our productivity. Further, there is an important difference between asking "How much of our present crop mix can we produce, given our technology and resources?" and asking "How many people can we feed?". Long before we reach the stage of starving masses we will shift to more intensive use of our cropland to produce fruits, vegetables and grains for direct consumption, rather than the very extensive uses we now make of land. We would likely continue to have cow/calf operations where dryland pasture or range is the only viable use of land. But in other areas we would shift to more intensive livestock management practices and to more feed-efficient livestock. And these shifts will all happen without government decree. They will all be rational economic responses of a competitive system to market forces.

I believe that all our experience suggests that markets do work; that a natural consequence of continued growth in exports to meet world food needs will eventually be improved profitability of farming; and that the resulting economic responses will be enhancement of the resource base, improved technology and productivity, and possibly some gradual shifts in the mix of products with which we feed ourselves. All of these responses imply both growth in our capacity to feed people--here and abroad--and more competitive returns to producers.

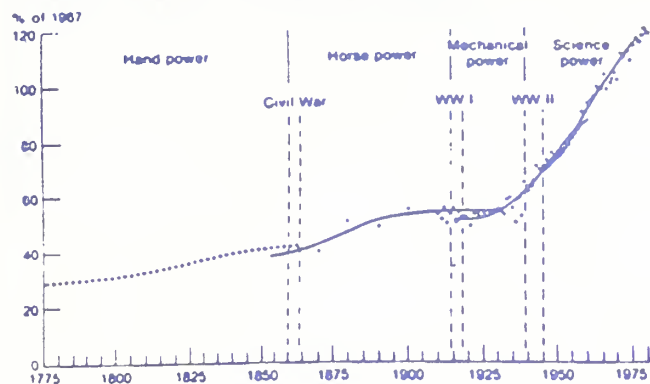
The message regarding potential for growth can be summarized in four points:

- o There is no serious problem with our physical capacity to feed ourselves and many more in the world than at present.

- o The economics of growth potential are complex and depend on the relationships among three key factors: the supply curve for productive resources, especially land and water; the productivity of those resources; and the effective demand for food and fiber.
- o There is no substitute for economic incentive: Higher net returns will attract new land development and improvement, more intensive use of the present land base, and new technology--hence higher productivity.
- o Thus, the question is not whether the production potential is there--the question is "At what price?"

Figure 1

U.S. Agricultural Productivity Growth During the Past 200 Years

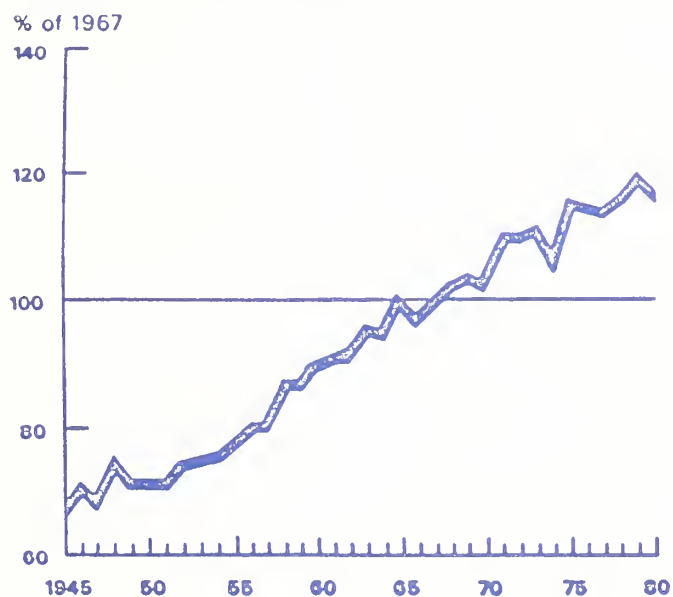


<u>Period</u>	<u>Annual Growth Rate*</u>
1775-1870	0.4
1870-1920	.5
1920-45	1.2
1945-80	1.6

*Point-to-point.

Figure 2

Total Farm Output per Unit of Input

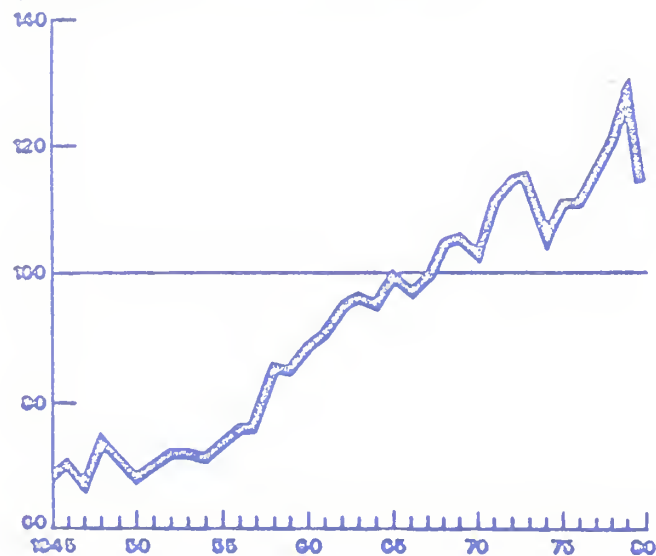


<u>Period</u>	<u>Annual Growth Rate*</u>
1945-49	1.2
1950-54	1.4
1955-59	2.7
1960-64	1.8
1965-69	1.6
1970-74	.4
1975-80	1.8
1950-59	2.0
1960-69	1.7
1970-80	1.2

*Point-to-point.

Figure 3

U.S. Crop Production per Acre
 % of 1967

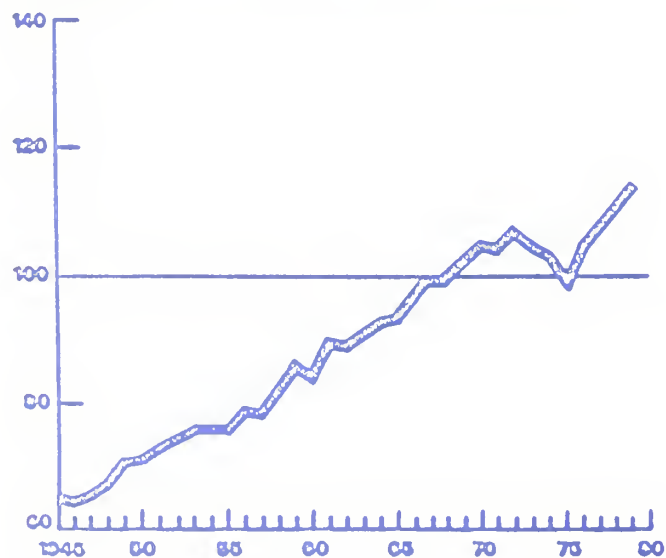


<u>Period</u>	<u>Annual Growth Rate*</u>
1950-59	2.7
1960-69	1.4
1970-80	1.2

*Point-to-point

Figure 4

Livestock Production per Breeding Unit
 % of 1967



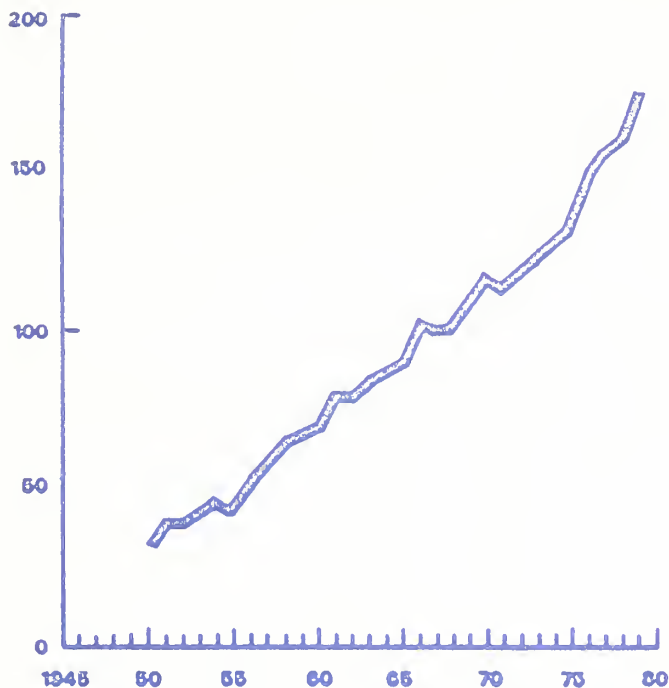
<u>Period</u>	<u>Annual Growth Rate*</u>
1950-59	1.9
1960-69	2.1
1970-79	1.1

*Point-to-point.

Figure 5

Total Chicken Production per Laying Hen

% of 1967



Index of pounds of ready-to-cook chicken meat produced per laying hen.

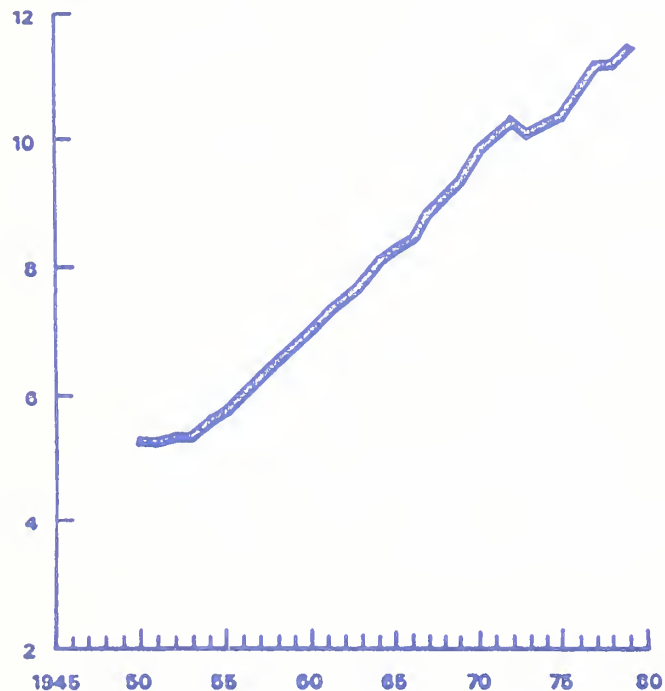
Period	Annual Growth Rate*
1950-54	7.2
1955-59	7.6
1960-64	9.8
1965-69	4.8
1970-74	3.3
1975-79	6.2

*Point-to-point.

Figure 6

Milk Production per Cow

Thousand Pounds



Period	Annual Growth Rate*
1950-54	1.6
1955-59	3.7
1960-64	3.5
1965-69	2.5
1970-74	1.7
1975-79	2.2

*Point-to-point.

Two weeks ago, the New York Times printed an article which began as follows:

"A farmer in Indiana might know more about computers, and might use them more often to manage the business, than some executives in New York City who use computers to determine inventories, profits per unit of sales and many other things.

"In fact, the farmer might have a small hand calculator stuffed in a pocket instead of the usual notebook...

"In the farmhouse, the chances are, a prosperous farmer might have a small desk-sized computer terminal where he can store information pertinent to previous years' crop results..."

That article went on to describe some of the things that are being done in Indiana to bring information delivery systems to the farm. I'm sure many of you may not feel this is headline news...and my purpose for citing this article certainly is not to poke fun at the urban press for something that is rather common knowledge among those of us in agriculture.

As a former vo-ag teacher, I felt the article's significance was its focus upon the career opportunities available in adapting computer technology to management of a farm. That reinforces my own thinking about the long range thrust of what we are doing in the Department of Agriculture in the area of information delivery systems.

Remarks prepared for delivery by Raymond D. Lett, Executive Assistant to Secretary John R. Block, before the Agricultural Outlook Conference, Washington, D.C., November 5, 1981

I'm aware of the risk in making predictions. I think it was Josh Billings, the newspaper humorist, who said, "Don't ever prophesy; for if you prophesy wrong, nobody will forget it; and if your prophesy right, nobody will remember it."

Be that as it may, I sincerely believe that the day is not far off when the American farmer -- upon getting up in the morning -- instead of turning on the radio to listen to the local weather and market reports --will flip the switch on his home computer terminal. As he keys in the appropriate access codes, his monitoring screen will produce an up-to-date analysis for his crop, for that day, including weather and growing conditions of major world-wide production areas...pertinent data on prices, market conditions, storage, transportation and related forecasts...comparisons of his own past production and profits...and, finally, a prioritized list of the things he should do that day to respond advantageously to these other conditions.

This may seem far-fetched to some people: But, as many of us know, the electronic gadgetry exists right now to do just that. What is presently missing is the software technology to implement such a scheme--as well as the data collection networks to gather the analytical foundation...the financial resources to put everything together...and the human resources to make it work successfully.

Make no mistake about my words...I fully recognize that these latter three elements are major hurdles to overcome. Yet, we are getting closer to putting these pieces together all the time. Some of this has been taking place in the Department of Agriculture over the past few years. And, the impetus to step-up the rate of progress is gaining momentum as the drive intensifies to economize in government.

Having just said that one of the major pieces needed to put this system together is financial resources...and, in the next breath say that economy in government is speeding up the process...may sound like a gross contradiction. It's not...and a little background may help to understand why.

Back in 1975, the National Archives and Records Service recommended that the Department of Agriculture set up a department-wide system for managing correspondence, directives, mail, files and records.

They were being inundated by the mountains of paperwork received from the Department which had to be stored. To improve their own system, and reduce current and future costs, they needed help from USDA -- and all the other government agencies as well -- to reduce the amount and form of paperwork they were called upon to store.

This recommendation was given greater impetus by the Commission on Federal Paperwork...which in 1977 estimated that the federal government spent \$43 billion annually on handling records, forms, reports, correspondence and similar materials. Further, the Commission and the General Accounting Office concluded that government agencies were wasting billions of dollars as a result of poor records management systems.

Congress responded by enacting the Paperwork Reduction Act of 1980 -- which went into effect in April of this year. The purposes of that Act are unmistakably clear: They are:

1. To minimize the Federal paperwork burden for individuals, small businesses, State and local governments, and other persons;

2. To minimize the cost to the Federal government of collecting, maintaining, using and disseminating information;

3. To maximize the usefulness of information collected by the Federal government.

4. To coordinate, integrate and, to the extent practical and appropriate, make uniform Federal information policies and practices;

5. To ensure that automatic data processing and telecommunications technologies are acquired and used by the Federal government in a manner which improves service delivery and program management, increases productivity, reduces waste and fraud, and--wherever practical and appropriate--reduces the information processing burden for the Federal government and for persons who provide information to the Federal government; and,

6. To ensure that the collection, maintenance, use and dissemination of information by the Federal government is consistent with the laws relating to confidentiality--including the Privacy Act.

I won't take time to go into all the details on the mechanics or schedule we are following to comply with the Act. What is more important is that the Act will provide a framework for government agencies to greatly improve their management of information resources...and save money doing it. That's the carrot.

The stick is that the Office of Management and Budget will oversee its implementation concurrent with its review of agency budgets. And to give further impetus, Congress has mandated that agencies must reduce the burden of federal information collection by 15 percent by October 1, 1982 -- with an additional reduction of another 10 percent by October 1, 1983.

Meeting those deadlines will require real dedication and alot of concerted effort. In essence, we need to go back to square one within the Department, and reexamine our uses of automated data processing (ADP), both internally and externally.

We need to start by identifying the basic missions of each agency and how ADP can be effectively utilized. We need to inventory what information is now being collected...how it's being handled and used within the Department...what hardware is available among agencies, and how much compatibility exists between the various systems. From there, we'll examine who is receiving the information...how it's being delivered...and for what purpose.

From this process, we will develop specific policies and guidelines on the management of information resources--including the information delivery systems used by USDA agencies. Compatibility will receive a very high priority.

This is not meant to say, however, that we envision one centralized computer network in the Department that would service all agencies for all their needs. Likewise, this does not mean that we will rely solely upon in-house hardware...or go exclusively to contracting for hardware.

As I indicated earlier, we are getting closer to putting together the pieces of a network that could supply much of the data that might be used by that farmer with his home computer terminal. Let me cite a few examples:

Recently, our Foreign Agricultural Service (FAS) -- in conjunction with the State Department--inaugurated a new minicomputer/telecommunications hookup that eventually will link the 67 agricultural counselors and attaches abroad with Washington. Data from satellite imagery monitoring on world-wide crop production and marketing will be available to headquarters analysts. Agricultural representatives overseas, likewise, will be able to obtain domestic crop production and marketing developments for buyers overseas.

Our Statistical Reporting Service (SRS) obtains data through the State Statisticians which are fed into the computer and analyzed for the outlook and situation reports. When these reports are released, a farmer or other interested party can now gain access to the computer to obtain the data without having to receive a written report through the mail.

The Animal and Plant Health Inspection Service (APHIS) is inaugurating a brucellosis information system to assist its field veterinarians and State officials in tracing cattle through marketing channels. This system has the potential to be an invaluable asset to nationwide disease control efforts.

Two years ago, the Agricultural Marketing Service updated its leased wire market news network from the old 150-words-per-minute capability to a newer 1,200-words-per-minute transmission system. The next generation of equipment logically might be high speed computers that would permit market news users to selectively receive prices and market data on any one or more of the 150-plus commodities the market news service carries.

AMS also has helped to sponsor a test of an electronic meat marketing system linking the buyers and sellers of dressed beef. If this system proves valuable to the meat marketing industry, it would be up to the industry to implement. While it would help AMS gather market news information, an electronic meat marketing system is not something which government should operate.

The Office of Governmental and Public Affairs, through a private contractor, is disseminating news releases, reports and other useful information to some of the Department's fields information offices, State Departments of Agriculture, State Extension personnel, and the news media. Some of this information, in turn, is further disseminated through respective ADP systems operated by different land-grant universities such as Michigan State, Purdue, Nebraska, Virginia Tech, Kentucky, and others.

Virtually all agencies in USDA are increasingly relying upon some form of word processing equipment for a variety of personnel and administrative uses.

For years, the Department has printed and distributed -- free -- thousands upon thousands of reports in one form or another...literally generating millions of pieces of paper in the process. The savings which could be accumulated by eliminating most of these written documents through the use of computerized systems are astronomical.

One of the most basic policy issues that will eventually have to be resolved is the question of to whom we deliver information free, and/or at what point in the combined system does the individual obtain access to a computer and from whom.

During the next four years I am confident we will make major strides in our management of information resources--for reasons of efficiency and economy. President Reagan has clearly made his intentions known to the agencies through OMB.

As a result, in four years, I believe we will have in place several of the key pieces that will eventually lead to that farmer I envision using his home computer terminal to program his daily activities, in response to events throughout the world the day before.

Mildred Thymian, Agricultural Marketing Service

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INTRODUCTION

Early this past summer, over 150 farmers from a 5-state area assembled at the RFK Stadium in the District of Columbia. It was not a protest. It was a revival, the rebirth of an old way of doing things. It was called an "open-air market." Consumers gathered there through the summer and into October twice a week to buy fresh produce straight from the farm.

It is an idea whose time has come and passed and come again to judge from the recent proliferation of such markets in metropolitan areas across the country. Experts call this manner of selling food "direct marketing." Our not so distant ancestors would have thought of it merely as "market day," a time when they went to town to lay in the weekly supplies of food.

Our great-grandparents also might have thought of it as a chore. To us the notion is fun and possibly somewhat desirable. Farmers make a little more money on a given quantity of food when they sell directly to consumers. And some of us believe that produce we get fresh off the farm has a better taste.

As an efficient mode of moving our nation's food supplies, however, no one would dream of suggesting that direct marketing has a big future. In a very limited way, direct marketing can compete and survive and possibly one day account for a couple of percentage points in the total of marketed farm products. But it cannot get the job done, not when most Americans believe that it is nearly their inalienable right to buy green lettuce, red tomatoes and fresh meat of every variety every day of the year.

The simple, rustic open-air market has given way to a modern marvel we take much for granted as we enter the sleek supermarkets where we do not even have to push the doors to open them. As streamlined as they have come to be, it is not the stores that are the marvel. The real marvel is the intricate network and dauntless teamwork that make up our modern agricultural marketing system, providing us with great varieties of fresh foods practically anytime and anywhere in the United States.

The supermarket is the last link in a very complicated chain that makes up the American agricultural marketing system. Transforming raw commodities into consumer products--moving from one end of the chain to the other--involves assembly, processing, storage, transportation and distribution.

Basically, what happens along the marketing chain is that individuals exchange title to units of a commodity. We sometimes forget about this fundamental process because marketing patterns have become well established and exchanges are negotiated very rapidly in what seems to be a simple and unstructured way.

But appearances can be deceptive. Each transaction in a commodity market involves a contract. And associated with each contract is an implied or explicit set of complex terms and specifications which, although widely accepted in agricultural commodity markets, are neither automatic nor easy to establish.

The establishment of contract terms and specifications involves the development of commodity grades and standards and of standard terminology to describe products exchanged so that each party to each negotiation may readily know the terms and specifications being offered the other. It involves the development of other contract terms and specifications based on commodity characteristics, such as perishability and storability, and needs of the trading parties, such as consumer buying habits or a foreign buyer's delivery requirements.

Traders in a commodity market must also be acquainted with the general conditions in a market if they are to negotiate exchange contracts quickly and efficiently. This requires the availability of information about current and prospective developments in the supply of, and the demand for, the commodity and in prices being negotiated. And there must be a good communication system by which traders obtain this information and by which they negotiate their exchange contracts.

Much of the work necessary in developing commodity exchange contract terms and specifications, and in providing market news and means of communications is done by private enterprise in response to the profit motive. Nevertheless, it has long been recognized that government must play a key role if some parts of these essentials to the functioning of a commodity market are to be developed and provided in an adequate, timely and unbiased fashion.

In many ways the functioning of the marketing system seems as organic as the commodities it moves. It is a living and growing entity that has to remain flexible, efficient and attuned to the times if it is to perform effectively. The decade of the 1980's will be a very exciting time presenting new and greater challenges as the system confronts decreasing world supplies of food and fiber in the face of ever increasing demand. There will be problems; but, from another point of view, there will also be opportunities.

The issues on which these opportunities hinge are the subject of this paper. These are issues which will concern us all during the 1980's. At issue are the costs of food and the forces which determine those costs--factors such as efficiency, productivity, stability and competition. This paper also will discuss how we attempt to control those forces and the important role that research will play as we adjust the system to make it respond to increasing national and international demand.

WHY FOOD COSTS WHAT IT DOES

From everyone's point of view the agricultural marketing system is a giant. In 1980, we fed it some \$130 billion in raw farm products, and it converted those products into more than \$400 billion of food and clothing for American consumers and \$40.5 billion of goods for our foreign neighbors.

This giant not only feeds and clothes us, it employs us. Our food and fiber system accounts for approximately 20 percent of the nation's gross business activity and 22 percent of total employment. The marketing portion of the food and fiber system represents 17 percent of the gross national product and 19 percent of employment. At present, it is estimated that approximately 30,000 companies engage in food processing, storage, and distribution.

As productive as this giant is, producers, marketers and consumers alike are concerned that it costs several hundred billion dollars a year to make it function. And costs are rising. The price tag on marketing domestic farm foods went from \$113 billion in 1975 to \$183 billion in 1980, an increase of 62 percent. The farm-retail spread--the difference between the price paid for a food product by consumers and its farm value--accounted for about 60 cents of each dollar spent by retail consumers in 1975. In 1980, this had increased to 68 cents.

Labor and packaging material are the costliest items in processing food; together they represent more than half of the net marketing cost, with labor accounting for 45 percent and packaging, 12 percent. Of course, these are averages. And as we all have noticed, some products are better buys than others. For example, a beer can or bottle costs five times as much as the value of the barley, hops and sugar that go into the beverage. At the other end of the spectrum, a product such as milk--which receives a minimum amount of processing after it leaves the farm--is worth five times as much as the container that holds it.

Labor and packaging are not the only costs we do not see when we review the cash register receipt at the supermarket check-out stand. The percentage breakdown in other food marketing costs (1980) is as follows: transportation, 8 percent; corporate profits (before taxes), 6 percent; business taxes, 4 percent; energy (not including transport), 5 percent; advertising, 2 percent; all other, 17 percent.

FORCES BEHIND SPIRALING FOOD COSTS Efficiency and Productivity

We cannot simply chalk up the spiraling costs to inflation and say they are only the concern of those who determine the availability of credit and the supply of money. Looking within the system itself, there seem to be three broad categories which may define the elements affecting agricultural marketing costs. They are: lagging productivity and inefficiency, instability, and imperfect competition.

An efficient marketing system is one in which waste is absent. The ideal for any marketing function is to produce the greatest good for society while using the fewest possible resources. Inefficiencies are the bane of this ideal, and they can take many forms. The use of technologically obsolete equipment and facilities is a common example. Moving product to market by indirect routes or using other than the least cost modes of transportation is another common type of marketing inefficiency.

We must remember, however, that ideals are goals which may be approached but never attained. A certain amount of inefficiency is unavoidable in the real world. As tastes change, as technology advances and the natural resources are depleted, the model for the ideal marketing system must be reshaped to remain viable. The system that is most efficient today is not likely to be the most efficient a decade from now.

The notion of inefficiency cannot be disentangled from the concept of productivity. The term "productivity" refers to the volume of output per unit of input. Output per unit of labor is the most common measure of productivity. Labor productivity is a relatively good measure of efficiency in food marketing since labor is almost one-half of food marketing costs.

Historically, productivity gains in food marketing have not been as high as those in farming. Within the food industry, productivity gains have generally been higher in the manufacturing area and lower in the service areas. Food industry sectors, which have shown more than 1.0 percent growth since 1972, represent less than 10 percent of total food industry employment. In retailing, output per employee-hour declined 1.0 percent between 1972 and 1977. Reasons for the decline in productivity growth in food marketing include: reduced investment, both in terms of capital as well as research and development; an increase in marketing services; government regulations; labor restrictions; and changing public attitudes.

Stability and Competition

No matter how efficient each sector is within the agricultural marketing system, the various stages in the marketing chain must be coordinated if waste is to be avoided. Coordination is a function of the systems of exchange. To be efficient, an exchange system must provide sellers and buyers convenient access to each other for the purpose of trading. It must enable the buyer to accurately gauge product quality. And it must provide assurances that the buyer will receive the product in good order, and that the seller will receive timely payment.

Among the most common exchange systems in agriculture are "administered pricing" and private negotiations between individual sellers and buyers. If successive stages are owned by different firms, coordination is accomplished through the exchange system with its explicit pricing. The firms involved determine what and how much to produce, process, store or transport depending upon observed or expected prices. Alternatively, if the successive stages are owned by the same firm, these decisions are made internally without explicit pricing. This is the case of vertical integration through ownership.

Waste and inefficiency enter the picture when the systems of exchange suffer from instability and imperfect competition. The vagaries of weather, disease and insect infestation make farm output inherently unstable. This, combined with imperfect foresight of farmers and lags associated with the production process, leads to cycles in output for some commodities. Even the casual observer will notice that this problem is global in scope. When crops in Russia or elsewhere fail to reach expectations, we, as well as the rest of the world, are directly affected. Fluctuations in the quantities of farm products are accompanied by fluctuations in prices and farmers returns. The resulting income variations impose hardships on farm families and make credit harder to obtain.

Instability in farm product output also poses a problem for the marketing firm. If facilities and equipment are installed to handle the volumes during periods of high output, they go unused during periods of lower output. But, if such facilities and equipment are not installed, bottlenecks and waste occur during the high output periods. When prices and volumes fluctuate, marketing firms, like farms, face hardships and find credit more difficult to obtain.

Concern about the competitiveness of agricultural markets is directly related to the decline in large organized central markets and the increase in decentralized trading where each farmer's product is exposed to only one or a few buyers. This often turns the organized market into a residual market, used primarily for products of low quality, distress transactions, or the sale of small or odd-sized lots.

The decline of organized markets also geographically isolates products denying them access to a sufficient number of buyers. Buyers will often prefer to deal with sellers closest to product delivery points and with larger sellers to reduce total time and cost of transactions. This may result in substantial increases in marketing and transportation costs for smaller dispersed producers, since dealers may be required to assemble larger, more economical lots.

Yesterday's bustling terminal markets, once as congested as New York City's garment district, have become virtual ghost towns where the closest thing to a traffic jam might be two trucks arriving before noon on the same day. For a number of agricultural commodities, this decline in large, central markets has led to increased formula trading which has resulted in "thin markets." Meat and eggs are prime examples. While there is some disagreement about the definition of thin markets and the economic consequences, thin markets commonly display a relatively small number of negotiated transactions per unit of time. With few potential buyers and sellers standing-by at anytime, it becomes difficult to sell without driving the price down, or to buy without raising the price. Consequently, prices on thin markets are often erratic and do not necessarily represent the true value of the product. Such prices may be subject to manipulation as individual traders discover that they can affect the market price by their offers to buy or sell.

Thin markets and formula trading tend to feed upon each other. As buyers and sellers step out of the negotiating area to obtain the short-run efficiencies inherent in formula pricing, the market becomes thinner. As the market becomes thinner, negotiating trades becomes more difficult, and formula pricing becomes more attractive. Eventually, negotiated trading can virtually disappear.

CONTROLLING THE MARKETING SYSTEM Balancing Government and Private Involvement

Whether we control the marketing system or let it control us will be the challenge of the 1980's. It will be a big opportunity and a tremendous responsibility. We must apply our valuable resources and energy to improve marketing with the same intensity and optimism that we have used to increase production in agriculture. This next decade will provide many opportunities to those who are innovative and willing to take some risk. USDA's commitment to reducing government involvement means that private agricultural interests will have more freedom in production and marketing decisions, more freedom to enhance their own gain and benefit society as a whole.

At the same time, USDA has recognized the need to refocus and to increase its emphasis on agricultural marketing. Since more decision-making is being returned to producers and marketers, government will strengthen its role as a vehicle through which the private sector can work to enhance competition and efficiency.

Improving Information

How do we achieve the proper balance? How do we weigh the sometimes disparate voices of government, industry and consumers and come up with solutions? One example involves the problem of thin markets and formula trading mentioned before. Under such conditions, it becomes difficult to maintain a viable and competitive market for the product. Readily available market information from centralized markets may not be reliable. And, collection of useful information on formula trades or direct negotiations is very difficult due to the large number of trades taking place under a variety of circumstances and terms.

The lack of accurate public price information may give the larger trader some competitive advantages over smaller traders. In agriculture, the structural imbalance between buyers and producers affords the buyers more accurate price information. This environment also increases the potential for price manipulation through selective or inaccurate reporting or release of information concerning the terms of private transactions.

Improved information enables producers to allocate their resources more efficiently; it permits distant buyers and sellers to make transactions with less product waste and lower costs of capital and labor; and it allows consumers to buy those items which give them more satisfaction.

In many agricultural markets, individual firms lack incentives to collect and disperse the amount of information needed to make marketing more predictable and less erratic. Too little information is typically produced by private enterprise. Ideally, sufficient resources should be devoted to creating market information so that the gains from its use are equal to the costs of collecting and dispersing it. Obviously, removal of all buying and selling uncertainty through a massive informational effort would be an inefficient and unattainable goal.

Government has tried to fill the data gap and has assumed a large role in collecting and disseminating statistical information to aid producers and consumers in making better decisions. At USDA, part of this effort is fulfilled through market news and part through the Department's "outlook" and "situation" work.

In our economic system, decisions about the production, processing and distribution of food and fiber are made by many individual farmers and marketing firms, each exposed to uncertainty. Few of these individual decisionmakers have the resources to conduct the comprehensive market and price analysis needed to make their best buying and selling decisions. Thus, public institutions should have the primary role in assembling, analyzing and disseminating situation and outlook information, and in helping private decision-makers analyze their marketing alternatives.

Several types of research are needed to improve the marketing information available to farmers and to enhance their ability to use it effectively. First, our econometric demand, supply and commodity forecasting models require continual updating and revision to take into account changes in the economy and to capitalize on new modeling techniques. A solid research base is essential if the quality of "outlook" and "situation" work is to be maintained and upgraded. Second, further research is needed to help farmers and merchants develop better risk management strategies, including how they can best time their sales and use various types of contracts and futures markets to control their exposure to market uncertainties. Third, the potential for expanded use of computers and electronic communication equipment to provide essential information to decisionmakers needs intensive study.

By contributing to better individual decisionmaking, these kinds of marketing research can improve the coordination of the production, processing and distribution of agricultural products. Shortages and supplies can be reduced. Stability can be enhanced and efficiency improved with benefits accruing to both producers and consumers.

THE PROMISE OF RESEARCH

The foregoing discussion focuses on information as a means for solving some of the problems with the marketing system. The problems are as interrelated as the solutions. One factor they have in common is the need for continuing research. It is no idle pipe dream to believe that gains similar in magnitude to our gains in agricultural production can be made in marketing through a comprehensive public and private research effort--the same sort of effort that has made our production techniques the envy of every nation in the world. Strengthening our marketing system will involve intensive research in a number of areas.

Improving Market Technology

Marketing technology research is broadly defined as the study of the composition, the constituents, and the physical and chemical properties of agricultural commodities. This work seeks to improve the quality of fresh foods, prevent losses by insects and market disorders, save energy and reduce costs through improving facilities, equipment and operating methods. Work in this area also relates to losses in the quality and nutritive value of farm products that may take place at any point in their production, processing, distribution, and preparation for use by consumers. Some examples of areas that either need research or further development are:

- A variety of research efforts to help reduce food losses due to the perishability of food;
- Genetic research to improve marketing characteristics of food;
- Research involving changes in product form, preservatives, product extenders and substitute food products, as well as improved processing technology;
- Improved standardization and packaging, and related material handling procedures;
- Better research methodology to assess all components of productivity, not just output per unit of labor input;
- The role of mechanization in improving productivity, its short- and long-run consequences;
- Adapting UPC scanner technology to small stores where the gain in information may be more important than checkout speed;
- Using robots for small orders in warehouses, and elsewhere in the food industry;
- A multi-firm systems approach to improving product handling; and
- Improved shelf-stocking and price marking systems for retail stores.

One very interesting area of marketing technology research--one that may have a bearing on the information research mentioned above--addresses the problems of inefficiency and imperfect competition in electronic trading. Electronic markets separate two distinct, but often combined, marketing functions: negotiating the trade and the physical transfer of the product from seller to buyer. Through the use of modern electronic technology, the former can be centralized while allowing the latter to remain decentralized.

Centralizing the price discovery process helps create the highly competitive market environment among a large number of buyers and sellers necessary for a high degree of pricing accuracy. Decentralizing the physical exchange of the commodity can eliminate much of the costly and inefficient process of assembling buyers, sellers and products at a single exchange point. When the current methodologies are refined, prices should more accurately reflect overall market-wide conditions, access to markets should be enhanced, market information should be more accurate and more readily available, and total marketing costs could be reduced.

Critical elements in the success of electronic trading involve the ability to satisfactorily describe to buyers the product traded and the ability to guarantee that both buyer and seller honor the sales agreement. Grades should adequately describe the product so that visual inspection by the buyer is not necessary, and the standards should be sufficiently flexible to describe a wide variation in product quality or differentiation. Descriptive selling is not new, and the adequate grades and standards to facilitate it exist or can be devised for most agricultural products. Performance guarantees can be provided through contracts backed up as necessary by buyer/seller bonding or by an exchange organization which sets standards for membership and guarantees members' obligations.

Marketing of agricultural products is complicated because these products can vary by size, quality, yield and other factors. Much research has been done to measure these product characteristics in order to develop grades and standards which communicate these characteristics to buyers and sellers. But, if our marketing system is to be more efficient and productive, research in this area should continue. USDA is committed to improving the work on grades and standards.

Research involving grades and standards first determines which characteristics are important. Then, a consistent means to distinguish and measure these characteristics and their variability is developed to implement a grading system. The results of this research facilitates trade by efficiently communicating product information. Without grades and standards (and inspection) to classify or distinguish products, buyers would have to personally examine every purchase.

Improving Marketing Economics and Transportation

The litany of research areas begging for more attention is too long and varied to be dealt with in this paper. Two broad areas that will require as much attention as marketing technology are marketing economics and transportation. The former is concerned with problems of increasing efficiency in procurement, processing and distribution activities of the marketing system and of providing information for orderly adjustments to changes inside and outside of agriculture. It focuses on problems of technical, pricing and economic efficiencies of firms marketing agricultural products and inputs. It also deals with the factors affecting quantities supplied and demanded, the various types of price relationships, price determination, price discovery and alternative pricing methods.

As for transportation research, it will provide answers to problems being faced by all industries. How do we get our products to the proper destinations as quickly and cheaply as possible? Farmers must have timely access to their markets or the whole marketing system will break down.

Finding solutions to production, marketing and consumption problems can be beneficial to all of society. An individual person or firm, however, often captures such a small proportion of the benefits from such solutions that the individual finds it uneconomical to mount a research program. Of the approximately 30,000 firms engaged in food processing, storage and distribution, only about 100 have research facilities. In those cases where the patent laws restrict use of research results to an individual or firm, society may yet choose to support a public research program so everyone can profit.

As a result, part of the challenge of the 1980's will be to determine the respective research roles of the public and private sectors. USDA was once deeply involved in marketing research. The next ten years might be the time for the Department to recapture its former leadership role.

THE INSEPARABILITY OF DOMESTIC AND WORLD MARKETS

Back in the 1960's, Marshall McLuhan coined the term "global village" to refer to the effect that electronic communications has on geographical and political boundaries. It is now two decades later, and we are really beginning to feel just how close our international neighbors are. Less than two weeks ago, 22 nations met at an economic summit conference in Cancun, Mexico. Basically, the object of the meeting was to determine how to distribute the world's riches. We are the focus of any such deliberation because the United States has more to offer than any other nation. We must be ready to meet the challenge.

Today, agriculture is still the nation's most basic economic activity. Our ability to produce for world markets and reduce our balance of payments deficit is unmatched by any other segment of our economy.

With growing imports, particularly oil imports, our balance of trade continues to be negative. In addition to our oil induced deficit, the United State's share of world exports of manufactured goods has been deteriorating. It is our agricultural exports which have mitigated our trade problems. In 1980, agricultural exports amounted to \$40.5 billion. This year, agricultural exports are expected to be \$44 billion.

Because our major export advantage lies with agriculture, we must continue our export market development work during the coming decade. At the same time, it is imperative that we have compatible domestic policies to support our foreign market development. We must have a domestic marketing system capable of delivering products when, where and in the form needed as efficiently as possible.

* * * * *

We have come a long way from the so-called "good old days" when we could only buy the food that happened to be in season in our neck of the woods. These are better new days, and changes that will come can make them better still. As the future evolves, what we now think of as agricultural marketing could become as rustic as those open-air markets which are as fashionable and fun as they are unsuited to the monumental task of feeding all the people, all the time.

We should not be worried about the challenges that face us, we should be concerned. All of us have something to say about what happens with our agricultural marketing system. We are all involved at one or more points in the chain our food and fiber follow as they move from the field to feed and clothe us.

We should regard our involvement actively, making it our job to learn as much about the issues as possible. That will mean learning how the issues are decided and who are the ones directly responsible for making the decisions. The development of agricultural policies will directly affect our businesses and their profitability. Thus it is our responsibility to make our views and desires known. It is government's responsibility to use our input to help make the marketing system as effective and efficient as it can be.

One overriding question we will face in this exciting decade will involve the determination of where and when our commodities are marketed. Who is to make that determination? It is a question of economics and getting our system to function as freely and efficiently as possible. The producers of our farm commodities are being squeezed between higher production costs and lower returns on their investments of time and money. And they are in danger of going the way of the goose that laid the golden eggs. We cannot let that happen. They cannot let it happen to themselves. They must become as active in the forum of debate as they are in their fields.

The agricultural marketing chain is changing. It is a giant. We control it, but it also controls us. We have the power to change it if we, ourselves, have the willingness to change.



REMARKS OF PHILIP MCBRIDE JOHNSON
CHAIRMAN, COMMODITY FUTURES TRADING COMMISSION
BEFORE THE 1982 AGRICULTURAL OUTLOOK CONFERENCE
SESSION #35, WASHINGTON, D.C.

THE FUTURES MARKETS TODAY ARE VERY BIG BUSINESS. ELEVEN EXCHANGES IN FIVE CITIES OFFER ROUGHLY NINETY DIFFERENT TYPES OF CONTRACTS. OVERALL VOLUME IN 1980 WAS IN THE 100 MILLION CONTRACT RANGE. THE AGGREGATE DOLLAR VALUE OF THOSE CONTRACTS WAS IN THE TRILLIONS. A BETTER INDICATOR OF REAL DOLLARS INVOLVED--MARGIN DEPOSITS AND COMMISSION INCOME--WOULD BE IN THE BILLIONS. THIS BUSINESS IS GENERATED BY FEWER THAN 400 BROKERAGE FIRMS, USING ABOUT 30,000 SALESMEN. THEY SERVICE AN ESTIMATED 150,000 CUSTOMER ACCOUNTS, RANGING FROM INDIVIDUALS TO OVER 1,000 COMMODITY MUTUAL FUNDS CALLED "POOLS." SOMETIMES THE BROKERAGE HOUSES GIVE TRADING ADVICE, BUT FREQUENTLY THIS SERVICE IS PROVIDED FOR A FEE BY ROUGHLY 2,000 PROFESSIONAL TRADING ADVISORS. AND, ALL ORDERS ARE ULTIMATELY EXECUTED IN THE MARKETS BY ABOUT 4,000 FLOOR BROKERS AND ARE CLEARED AND GUARANTEED BY EACH EXCHANGE'S CLEARING ORGANIZATION.

IT IS THE RESPONSIBILITY OF THE COMMODITY FUTURES TRADING COMMISSION TO "REGULATE" ALL OF THE PEOPLE JUST MENTIONED:

THE EXCHANGES, BROKERAGE FIRMS, SALESMEN, POOLS, ADVISORS, FLOOR BROKERS AND CLEARING HOUSES. AND, IF CUSTOMERS REACH A SIZE WHERE THEY CAN INFLUENCE MARKET PRICES, THE COMMISSION REGULATES THEM AS WELL. REGULATION CONSISTS MAINLY OF THREE TOOLS: LICENSING, MARKET SURVEILLANCE, AND RULES AGAINST MANIPULATION, FRAUD AND NONCOMPETITIVE TRADING. LICENSING IS A SCREENING DEVICE IN THE FIRST INSTANCE, AND ACTS AS A CONTINUING CHECK AGAINST UNFITNESS. MARKET SURVEILLANCE IS ONGOING POLICING AGAINST PEOPLE-INSPIRED DISRUPTIONS. AND ETHICAL RULES DEFINE THE PERMISSIBLE BOUNDARIES OF BEHAVIOR. THESE ARE THE COMMISSION'S CORE FUNCTIONS.

IN ADDITION, THE COMMISSION IS RESPONSIBLE FOR STUDIES OF THE MARKETS, FOR EDUCATION, AND FOR OPERATING A UNIQUE "REPARATIONS" PROGRAM IN WHICH IT CAN AWARD DAMAGES TO INJURED MARKET PARTICIPANTS UNDER CERTAIN CIRCUMSTANCES. OVER 4,000 OF THESE REPARATIONS CASES HAVE BEEN FILED WITH THE COMMISSION, AND THEY OFTEN INVOLVE ISSUES AS COMPLEX AS ANY HANDLED BY THE FEDERAL COURT SYSTEM.

THE COMMISSION ITSELF IS A NEWCOMER TO THE FEDERAL SCENE BECAUSE IT IS ONLY 7 YEARS OLD. HOWEVER, IT IS THE SECOND GENERATION OF POLICEMEN IN THE FUTURES MARKETS. FROM 1922 UNTIL 1975, THE MARKETS WERE REGULATED BY THE DEPARTMENT OF AGRICULTURE. 1922, BY THE WAY, WAS A DOZEN YEARS BEFORE THE NATION'S STOCK EXCHANGES CAME UNDER FEDERAL REGULATION.

THE COMMISSION WAS CREATED, AT LEAST IN PART, BECAUSE FUTURES TRADING HAS EXPANDED BEYOND AGRICULTURAL PRODUCTS INTO OTHER AREAS LIKE METALS, FOREIGN CURRENCIES AND CONSTRUCTION MATERIALS. BY 1975, THE MOST ACTIVE COMMODITY WAS SILVER. SINCE 1975, FUTURES TRADING HAS BEGUN IN GOVERNMENT DEBT INSTRUMENTS, BANK PAPER, AND ENERGY PRODUCTS. TODAY, THE PREMIER COMMODITIES ARE GOLD AND U.S. TREASURY BONDS. THESE ARE NOT ITEMS WITHIN THE MAINSTREAM OF USDA'S ACTIVITIES; HENCE, THE COMMISSION'S CREATION.

BUT THERE IS A COMMON THREAD CONNECTING ALL OF THESE FUTURES CONTRACTS, NAMELY, THEY HAVE THE SAME ECONOMIC FUNCTIONS. FIRST, THEY PROVIDE USEFUL PRICE INFORMATION AS TO THE ANTICIPATED VALUE OF A COMMODITY AT A LATER DATE. A FUTURES CONTRACT, TRADING TODAY BUT NOT EXPIRING UNTIL NEXT YEAR, WILL BE PRICED BY THE MARKET AT TODAY'S BEST ESTIMATE OF WHAT THAT COMMODITY WILL BE WORTH NEXT YEAR. IT IS SIMPLY A PROJECTION, OF COURSE, AND CAN CHANGE AS NEW DEVELOPMENTS TAKE PLACE. BUT IT AIDS THE PRODUCER IN MAKING PLANTING OR PRODUCTION DECISIONS, AND IT HELPS THE MERCHANTISER IN QUOTING FOR FUTURE DEALS. IN A TRULY COMPETITIVE MARKET, THIS PRICE DISCOVERY FUNCTION IS THE BEST TOOL AVAILABLE FOR LOOKING INTO THE MURKY FUTURE.

A SECOND ECONOMIC FUNCTION OF ALL FUTURES CONTRACTS IS THEIR UTILITY AS A PRICE-SETTING MECHANISM, USUALLY CALLED "HEDGING." HERE, A BUYER OR SELLER CAN ACTUALLY LOCK IN A

PRICE FOR THE COMMODITY EVEN BEFORE A COMMERCIAL TRANSACTION IS MADE. THIS ABILITY TO PRICE A DEAL EVEN BEFORE IT IS MADE IS PERHAPS THE FUTURES MARKET'S GREATEST SERVICE.

HERE, IN SIMPLE TERMS, IS HOW HEDGING WORKS. LET US ASSUME THAT A GRAIN MERCHANT HAS CONTRACTED TO SELL WHEAT TO INDIA AT \$3 A BUSHEL, FOR SHIPMENT IN MARCH OF 1982. THE PRICE OF \$3 PER BUSHEL IS A PROFITABLE ONE BASED UPON TODAY'S COST OF WHEAT. BUT, IN ALL LIKELIHOOD, THE MERCHANT DOES NOT YET OWN THE WHEAT THAT WILL BE SHIPPED, AND WILL HAVE TO BUY IT EARLY NEXT YEAR. IF THE COST OF WHEAT RISES BETWEEN NOW AND THEN, THE MERCHANT'S PROFIT MARGIN COULD BE WIPED OUT. TO AVOID THIS RISK, THE MERCHANT CAN (AND SHOULD) BUY WHEAT FUTURES CONTRACTS NOW, AT TODAY'S PRICE. THIS "LONG" POSITION IN THE WHEAT FUTURES MARKET MEANS THAT, IF PRICES DO INCREASE BEFORE THE SHIPMENT MUST BE MADE NEXT YEAR, THOSE CONTRACTS WILL REALIZE A PROFIT DUE TO THE PRICE RISE. THEN, WHEN THE MERCHANT HAS TO PAY MORE NEXT YEAR FOR PHYSICAL WHEAT TO ASSEMBLE THE SHIPMENT, THE PROFIT FROM THE FUTURES CONTRACTS WILL OFFSET PART OR ALL OF THAT ADDED COST. ASSUMING THAT THE FUTURES PRICE OF WHEAT AND THE CASH PRICE PARALLEL EACH OTHER, THE OVERALL TRANSACTION WOULD LOOK LIKE THIS:

NOVEMBER 1981: SALE TO INDIA FOR SHIPMENT IN MARCH
1982 AGREED TO AT \$3 PER BUSHEL

CURRENT CASH PRICE = \$2.90

PROFIT = 10 CENTS

"LONG" FUTURES ACQUIRED AT \$2.90

MARCH 1982: PHYSICAL WHEAT BOUGHT AT \$3.20 PER BUSHEL

ADDED PHYSICAL COST	=	30 CENTS
CURRENT FUTURES PRICE	=	\$3.20
PROFIT ON FUTURES	=	30 CENTS
NET COST OF PHYSICALS	=	\$2.90
PROFIT	=	10 CENTS

FUTURES CONTRACTS CAN ALSO BE USED TO PROTECT AGAINST PRICE DECLINES. LET US RETURN TO OUR GRAIN MERCHANT BUT MAKE DIFFERENT ASSUMPTIONS. SUPPOSE THAT THE GRAIN MERCHANT ALREADY OWNS WHEAT BUT HAS NOT YET MADE HIS SALE TO INDIA. THE MERCHANT'S RISK AS OWNER OF THE WHEAT IS THAT ITS VALUE WILL DECLINE, PERHAPS BELOW HIS COST OF BUYING IT, AND THAT HE WILL EVENTUALLY HAVE TO SELL THE WHEAT AT A LOSS. HE CAN (AND SHOULD) SELL WHEAT FUTURES CONTRACTS SINCE "SHORT" FUTURES CONTRACTS WILL REALIZE A PROFIT IF PRICES DECLINE. ASSUMING THAT THE FUTURES PRICE OF WHEAT AND THE CASH PRICE PARALLEL EACH OTHER, THE OVERALL TRANSACTION WOULD BE:

NOVEMBER 1981: BOUGHT PHYSICAL WHEAT AT \$2.90 PER BUSHEL

"SHORT" FUTURES ACQUIRED AT \$2.90

MARCH 1982: SOLD WHEAT TO INDIA AT \$2.50 PER BUSHEL

LOSS ON SALE	=	40 CENTS
CURRENT FUTURES PRICE	=	\$2.50
PROFIT ON FUTURES	=	40 CENTS
PROFIT/LOSS	=	0 CENTS

I HAVE USED AGRICULTURAL COMMODITIES IN THESE EXAMPLES, BUT THE RESULT WOULD BE THE SAME FOR ANY COMMODITY. EASTMAN KODAK, FOR INSTANCE, COULD PROTECT AGAINST RISING SILVER PRICES IN THE SAME WAY THAT THE GRAIN MERCHANT HEDGED AGAINST AN INCREASE IN WHEAT PRICES. OR, CITIBANK COULD USE TREASURY BILL FUTURES TO PROTECT ITSELF AGAINST FALLING INTEREST RATES JUST AS THE GRAIN MERCHANT HEDGED AGAINST A COLLAPSE IN WHEAT PRICES. THE AIM, IN ALL OF THESE TRANSACTIONS, IS TO OWN FUTURES THAT WILL REGISTER PROFITS WHEN COMMERCIAL TRANSACTIONS ARE PRODUCING LOSSES. FUTURES "HEDGING," IN EFFECT, IS LIKE BUYING PRICE INSURANCE.

IT IS BECAUSE ALL FUTURES CONTRACTS PROVIDE THE SAME ECONOMIC SERVICES THAT THEY ARE ALL UNDER THE REGULATION OF ONE AGENCY, THE CFTC. REGARDLESS OF THE UNDERLYING COMMODITY, OR WHO USES IT, FUTURES CONTRACTS ARE ESSENTIALLY THE SAME. THIS IS TRUE IN ECONOMICS AND IN THE PRACTICAL WORLD AS WELL. BANKS, CONSTRUCTION FIRMS, ENERGY PRODUCTS DISTRIBUTORS AND METALS REFINERS HAVE ALL BEEN TAUGHT HOW TO USE THE FUTURES MARKETS BY EXCHANGES AND TRADERS WHO, FOR 100 YEARS, KNEW ONLY AGRICULTURAL COMMODITIES. AND IT IS COMMONPLACE FOR PROFESSIONAL TRADERS TO MOVE WITH AGILITY BETWEEN THE CORN PIT AND THE PITS WHERE PLYWOOD, PALLADIUM AND PESOS ARE TRADED.

EVEN SO, IT IS SOMETIMES ARGUED THAT THE REGULATORY RUBRIC FOR FUTURES TRADING SHOULD DIFFER, DEPENDING UPON WHAT COMMODITY IS TRADED. CONGRESS HAS NEVER ENDORSED

THIS THEORY, BUT IT SURFACES TIME AND TIME AGAIN. THE COMMISSION BELIEVES THAT AN OBSESSION WITH THE NATURE OF THE UNDERLYING COMMODITY WOULD CAUSE UTTER CHAOS, WITHOUT ADDING ANY REAL PROTECTION. WHO WOULD REGULATE PESO FUTURES TRADING: THE MEXICAN GOVERNMENT, THE WORLD BANK, OR THE STATE DEPARTMENT? WHO WOULD REGULATE FUTURES CONTRACTS IN GNMA CERTIFICATES: THE GOVERNMENT NATIONAL MORTGAGE ASSOCIATION THAT ISSUES THE INSTRUMENTS; THE TREASURY DEPARTMENT THAT GUARANTEES THEM; THE FHA THAT INSURES THE UNDERLYING MORTGAGES; THE STATE AUTHORITIES REGULATING S&L'S THAT MAKE THE MORTGAGE LOANS? NO, REGULATION CANNOT BE CONDUCTED SENSIBLY ON A PRODUCT-LINE BASIS. INSTEAD, IT MUST BE TAILORED TO WHAT FUTURES CONTRACTS IN GENERAL ARE, AND WHAT THEY ALL HAVE IN COMMON--PRICE-DISCOVERY AND HEDGING SERVICES. IT WOULD MAKE NO MORE SENSE TO HAVE DIFFERENT REGULATORS FOR DIFFERENT COMMODITIES THAN IT WOULD TO CREATE SEPARATE REGULATORS FOR INSURANCE COMPANIES DEPENDING UPON WHETHER THEY INSURE HOMES, FACTORIES, SHIPPING OR AIR TRANSPORTATION. INSURANCE, AFTER ALL, IS INSURANCE, AND FUTURES ARE SIMPLY FUTURES.

ANOTHER REASON FOR CENTRALIZED REGULATION WAS BROUGHT HOME TO ME VIVIDLY IN AUGUST, WHEN I MET WITH A GROUP OF WHEAT PRODUCERS AND CATTLE FEEDERS IN CENTRAL KANSAS. I WENT THERE, FULLY EXPECTING THAT INTEREST WOULD CENTER ON DEPRESSED WHEAT PRICES. KANSAS HAS BEEN DOUBLY CURSED THIS YEAR WITH LOW PRODUCTION WHILE RECORD CROPS NATIONWIDE

HAVE OCCURRED. BUT THE DISCUSSION FOCUSED ALMOST ENTIRELY ON HIGH INTEREST RATES. I SPENT FAR MORE TIME EXPLAINING FINANCIAL FUTURES--AND INTEREST RATE HEDGING--THAN CONDITIONS IN THE WHEAT MARKET. I RETURNED TO WASHINGTON WITH A BETTER APPRECIATION THAN EVER OF FUTURES TRADING AS AN INTERRELATED AND INTERDEPENDENT FAMILY OF INSTRUMENTS.

IN SEPTEMBER, THE COMMISSION ADOPTED A NEW PACKAGE OF REGULATIONS AUTHORIZING LICENSED COMMODITY EXCHANGES TO OFFER A NEW PRODUCT--OPTION--ON EXISTING, ACTIVE FUTURES CONTRACTS. THE REGULATORY ENVIRONMENT WILL BE CLOSELY CONTROLLED, TO IMPEDE THE UNSCRUPULOUS SALES PRACTICES THAT HAUNTED UNREGULATED OPTIONS IN PAST ERAS. AN OPTION CREATES MERELY THE OPPORTUNITY TO BUY OR SELL, AND IS A RIGHT THAT CAN EITHER BE EXERCISED OR ABANDONED. A PREMIUM IS PAID FOR THAT RIGHT. IF THE OPTION DOES NOT BECOME PROFITABLE DURING ITS LIFE, THE HOLDER NEED ONLY LET IT EXPIRE AND HIS COST IS THEN LIMITED TO THE PREMIUM ALREADY PAID.

SINCE THE HOLDER OF AN OPTION HAS LIMITED LIABILITY, THAT IS, HE CAN LOSE ONLY THE PREMIUM, OPTIONS CAN SOMETIMES BE A MORE ATTRACTIVE HEDGING VEHICLE THAN FUTURES CONTRACTS. THE LATTER PLACES THE OWNER AT RISK FOR THE FULL AMOUNT OF ANY ADVERSE PRICE CHANGE THAT OCCURS WHILE THE FUTURES CONTRACT IS HELD. FOR INSTANCE, IN THE EARLY 1970'S SOYBEAN FUTURES CONTRACTS ROSE QUICKLY FROM THE \$3 PER BUSHEL RANGE TO NEARLY \$13. THIS WAS GOOD NEWS, INDEED, FOR THOSE WITH SOYBEAN INVENTORIES, UNLESS THEY HELD "SHORT" FUTURES CONTRACTS. INCREASES IN PRICES CAUSE LOSSES IN "SHORT" FUTURES. THUS,

A SOYBEAN MERCHANT WHO HAD ACQUIRED "SHORT" FUTURES CONTRACTS AT \$3 A BUSHEL SUFFERED SUCCESSIVE LOSSES AS PRICES ROSE TO AROUND \$13, WIPING OUT THE UNEXPECTED INVENTORY PROFITS.

BUT, IF THE SAME MERCHANT HAD ACQUIRED "SHORT" SOYBEAN OPTIONS--CALLED "PUTS"--HE MIGHT HAVE FARED MUCH BETTER. HE WOULD HAVE PAID A PREMIUM OF, SAY, \$1 PER BUSHEL FOR THE OPTIONS. AS PRICES CLIMBED TO ROUGHLY \$13 A BUSHEL, THE MERCHANT WOULD SIMPLY HAVE ABANDONED HIS OPTIONS AND, EXCEPT FOR THE COST OF THE PREMIUM, COULD HAVE ENJOYED MOST OF THE UNEXPECTED PROFIT IN HIS INVENTORY.

OPTIONS ON SOYBEANS AND MOST OTHER AGRICULTURAL COMMODITIES ARE PROHIBITED BY A LAW ENACTED IN 1936. THE BAN WAS IMPOSED AFTER SCANDALS OCCURRED IN OVERNIGHT AND OTHER SHORT-TERM "INDEMNITIES" THAT WERE POPULAR IN THAT ERA, AND THAT WERE A FAR CRY FROM THE TYPE OF OPTIONS NOW SANCTIONED BY THE COMMISSION. EVEN SO, THE BAN REMAINS AND THE NEW REGULATIONS DO NOT ALLOW OPTIONS ON MOST FARM PRODUCTS. RECENTLY, BOTH AGRICULTURE COMMITTEES OF THE CONGRESS HAVE QUESTIONED THE COMMISSION ABOUT THE NEED TO MAINTAIN THE BAN. WE HAVE ADVISED THOSE COMMITTEES THAT THE SUBJECT IS WORTH FURTHER STUDY AND THAT, IF REGULATORY SAFEGUARDS ARE PUT IN PLACE, OPTIONS ON AGRICULTURAL COMMODITIES MIGHT SERVE LEGITIMATE HEDGING NEEDS. AND, OVER TIME, OPTIONS MIGHT ALSO PROVIDE A PRIVATE SOURCE OF PRICE PROTECTION THAT IS NOW ENCOMPASSED WITHIN CERTAIN FEDERAL FARM PROGRAMS.

ANOTHER INGREDIENT OF THE FUTURES MARKETS IS SPECULATION. HISTORICALLY, SPECULATORS HAVE BEEN ALLOWED--"TOLERATED" MAY BE A BETTER WORD--IN THE FUTURES MARKETS BECAUSE THEY ARE THE RISK-TAKERS WHO, IN EFFECT, SELL PRICE PROTECTION TO HEDGERS. TYPICALLY, THEY ARE THE LARGEST SINGLE GROUP IN ANY FUTURES MARKET, TRADING AMONG THEMSELVES WHEN HEDGERS ARE NOT PRESENT, AND TRADING WITH HEDGERS AS THEY ENTER AND EXIT THE MARKET. THEIR NUMBERS CANNOT BE LIMITED EFFECTIVELY TO A CERTAIN LEVEL OR PERCENTAGE OF ALL TRADING SINCE THERE IS NO PRACTICAL WAY TO KNOW WHEN, OR HOW MUCH, HEDGING WILL BE DONE. AND, WHEN HEDGING IS LIGHT, THERE REMAINS A NEED FOR PRICE DISCOVERY THAT SPECULATORS PROVIDE ON A CONTINUOUS BASIS.

EVEN SO, SPECULATORS ARE THE TARGET OF HEALTHY SUSPICION. FOR THAT REASON, THE COMMISSION MONITORS THEIR ACTIVITIES WITH SPECIAL CARE, ESPECIALLY TO ASSURE THAT SPECULATORS DO NOT GARNER SUFFICIENT MARKET POWER TO CREATE ARTIFICIAL PRICES. THIS IS NOT TO SAY THAT COMMERCIAL USERS OF THE MARKETS ARE EXEMPT FROM THIS TEMPTATION. INDEED, A NUMBER OF MANIPULATION CASES HAVE BEEN BROUGHT AGAINST THEM. NEVERTHELESS, THERE EXISTS A FEELING THAT SPECULATORS MAY NOT HAVE THE LOYALTY TO AND DEPENDENCE UPON THE MARKETS THAT COMMERCIALS DO, YEAR IN AND YEAR OUT, AND MAY BE MORE INCLINED TO MAKE A QUICK KILLING IRRESPECTIVE OF THE MARKET CONSEQUENCES.

FOR MANY YEARS, MOST AGRICULTURAL FUTURES CONTRACTS HAVE BEEN SUBJECT TO SPECULATIVE POSITION LIMITS THAT CONTROL

THE AGGREGATE AMOUNT OF FUTURES THAT ANY PARTICULAR SPECULATOR OR CONSORTIUM OF SPECULATORS CAN HOLD. MANY OTHER FUTURES CONTRACTS, HOWEVER, HAD NO SUCH LIMITS. THIS WAS REMEDIED IN SEPTEMBER, WHEN THE COMMISSION ORDERED THAT ALL EXCHANGES MUST SET SUITABLE SPECULATIVE POSITION LIMITS FOR ALL OTHER FUTURES CONTRACTS. WE EXPECT THAT THESE NEW LIMITS WILL BE ESTABLISHED IN A REASONABLE WAY, HIGH ENOUGH TO PERMIT VIGOROUS COMPETITION BUT LOW ENOUGH TO PRECLUDE MARKET DOMINATION.

IN CONCLUSION, I MUST OBSERVE WITH SOME FOREBODING THAT AGRICULTURE'S PLACE IN THE FUTURES WORLD HAS BEEN DECLINING STATISTICALLY FOR SEVERAL YEARS, AS NEW CONTRACTS ARE CREATED TO SERVE OTHER INDUSTRIES. TODAY, FARM FUTURES ACCOUNT FOR LESS THAN 50% OF ALL TRADING VOLUME. AND, OF THE 40-PLUS NEW CONTRACTS NOW BEFORE THE COMMISSION FOR INITIAL APPROVAL, ONLY 3 ARE IN AGRICULTURAL PRODUCTS. FEAR NOT, HOWEVER, SINCE THE COMMISSION IS DEDICATED TO ITS AGRICULTURAL ROOTS AND WILL REMAIN SO AS LONG AS THIS CHAIRMAN IS IN OFFICE. BUT VIGILANCE WILL BE REQUIRED TO ASSURE IN THE FUTURE AN EFFECTIVE VOICE FOR AGRICULTURE IN THE BOARDROOMS OF THE NATION'S COMMODITY EXCHANGES. IF THERE IS ANY WAY THAT WE CAN HELP, WE WILL.

VOLUME HIGHLIGHTS

1980 and Comparison with 1979

Rank	EXCHANGE	<u>1980</u>		<u>1979</u>		Rank
		Contracts	%	Contracts	%	
1.	Chicago Board of Trade	45,281,571	49.18	33,870,680	44.59	(1)
2.	Chicago Mercantile Exchange	22,261,295	24.17	19,930,798	26.24	(2)
3.	Commodity Exchange, Inc	11,009,389	11.95	12,952,353	17.05	(3)
4.	Coffee, Sugar & Cocoa Exchange	4,886,416	5.31	2,510,179	3.30	(5)
5.	MidAmerica Commodity Exchange	2,993,636	3.25	2,568,950	3.38	(4)
6.	New York Cotton Exchange	2,653,294	2.88	1,875,126	2.47	(6)
7.	Kansas City Board of Trade	1,298,047	1.41	1,037,018	1.37	(7)
8.	New York Mercantile Exchange	1,154,905	1.25	828,249	1.09	(8)
9.	Minneapolis Grain Exchange	360,978	.39	328,799	.43	(9)
10.	New York Futures Exchange	183,993	.20	-----	----	----
11.	American Commodity Exchange	12,585	.01	64,319	.08	(10)
	TOTAL	92,096,109	100.00	75,966,471	100.00	

	COMMODITY GROUP	<u>1980</u>		<u>1979</u>		Rank
		Contracts	%	Contracts	%	
1.	Grain	20,349,023	22.1	14,534,603	19.1	(3)
2.	Soybean Complex	19,207,489	20.9	15,808,411	20.8	(2)
3.	Precious Metals	13,171,816	14.3	18,163,696	24.0	(1)
4.	Financial Instruments	12,469,878	13.5	5,607,005	7.4	(5)
5.	Livestock & Products and Poultry	11,639,519	12.6	11,902,203	15.7	(4)
6.	Imported Agric. Commodities <u>1/</u>	4,886,416	5.3	2,510,179	3.3	(6)
7.	Foreign Currency	4,222,820	4.6	2,222,978	2.9	(8)
8.	Other Agric. Commodities <u>2/</u>	3,052,307	3.3	2,081,287	2.7	(9)
9.	Non-Precious Metals	1,848,108	2.0	2,301,108	3.0	(7)
10.	Lumber Products	1,010,424	1.1	801,107	1.1	(10)
11.	Petroleum Products	238,309	0.3	33,894	---	(11)
	TOTAL	92,096,109	100.00	75,966,471	100.00	

1/ Excludes Imported Beef

2/ Cotton, Orange Juice, Potatoes & Eggs



FUTURES INDUSTRY ASSOCIATION

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VOLUME HIGHLIGHTS

1980 and Comparison with 1979

Rank	Contracts With Volume Over 100,000	1980		1979		Rank
		Contracts	%	Contracts	%	
1.	Corn, CBoT	11,946,975	12.97	8,671,719	11.42	(2)
2.	Soybeans, CBoT	11,768,197	12.78	9,114,348	12.00	(1)
3.	Gold, COMEX	8,001,410	8.69	6,541,893	8.61	(4)
4.	T-Bonds, CBoT	6,489,555	7.05	2,059,594	2.71	(12)
5.	Live Cattle, CME	5,997,047	6.51	7,214,848	9.50	(3)
6.	Wheat, CBoT	5,428,160	5.89	3,575,395	4.71	(6)
7.	Sugar, CSC	3,576,662	3.88	1,792,723	2.36	(15)
8.	T-Bills(90-day)CME	3,338,773	3.63	1,930,482	2.54	(13)
9.	Soybean Meal, CBoT	3,218,690	3.49	2,647,821	3.49	(10)
10.	Soybean Oil, CBoT	3,167,895	3.44	3,081,646	4.06	(8)
11.	Gold, CME	2,543,419	2.76	3,558,960	4.68	(7)
12.	Cotton #2, NYCE	2,490,405	2.70	1,689,051	2.22	(16)
13.	GNMA Mrtges, CDR,CBoT	2,325,892	2.53	1,371,078	1.80	(18)
14.	Pork Bellies, Fzn, CME	2,250,945	2.44	1,514,176	1.99	(17)
5.	Live Hogs, CME	2,153,767	2.34	1,805,710	2.38	(14)
6.	Copper, COMEX	1,848,080	2.01	2,301,033	3.03	(11)
17.	Wheat, KCBOT	1,297,757	1.41	1,037,018	1.37	(19)
18.	British Pound, CME	1,263,750	1.37	513,682	.68	(24)
19.	Silver, COMEX	1,058,734	1.15	4,080,619	5.37	(5)
20.	Soybeans, MIDAM	1,052,707	1.14	964,596	1.27	(21)
21.	Deutschemark, CME	922,608	1.00	450,856	.59	(26)
22.	Coffee "C", CSC	906,944	.98	449,799	.59	(27)
23.	Feeder Cattle, CME	874,313	.95	980,619	1.29	(20)
24.	Lumber, CME	838,676	.91	649,478	.85	(22)
25.	Swiss Franc, CME	827,884	.90	493,944	.65	(25)
26.	Canadian Dollar, CME	601,925	.65	399,885	.53	(28)
27.	Japanese Yen, CME	575,073	.62	329,645	.43	(31)
28.	Wheat, MIDAM	550,950	.60	379,975	.50	(29)
29.	Gold, MIDAM	447,494	.49	200,359	.26	(37)
30.	Corn, MIDAM	440,615	.49	323,808	.43	(33)
31.	Platinum, NYME	429,708	.47	536,124	.71	(23)
32.	Potatoes, NYME	393,759	.43	183,868	.24	(39)
33.	Cocoa,CSC	388,971	.42	232,183	.31	(34)
34.	Silver, CBoT	341,033	.37	2,720,589	3.58	(9)
35.	Wheat, MGE	333,610	.36	328,799	.43	(32)
36.	Oats, CBoT	320,934	.35	215,928	.28	(35)
37.	No. 2 Heating Oil, NYME	238,284	.26	33,804	-	-
38.	Silver, MIDAM	209,494	.23	361,576	.48	(30)
39.	Live Cattle, MIDAM	186,831	.20	208,997	.28	(36)
40.	Plywood, CBoT	169,550	.18	146,570	.19	(40)
1.	Orange Juice, NYCE	162,864	.18	186,018	.24	(38)
.	T-Bonds, NYFE	139,410	.15	-	-	-
3.	Live Hogs, MIDAM	103,181	.11	127,674	.17	(41)
Contracts with Volume Under 100,000 Contracts		473,178	.52	559,581	.78	
TOTAL		92,096,109	100.00	75,966,471	100.00	-701-

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Over the past 10 years, agricultural exports have become the primary growth factor in U.S. agriculture. The U.S. farmer and farm programs are geared to exports. Overall, more than one-third of the agricultural cropland in the United States is producing for overseas markets and one-fourth of U.S. agricultural marketings moves into world trade. Every dollar that is returned to the farm sector from exports is more than doubled in the economy. Farm exports sustain more than a million U.S. jobs, in areas such as producing, processing, and shipping. They cut tax costs for farm programs and stimulate production of food for the benefit of all consumers.

But even as the importance of exports has grown in our national economy, so too have the international marketing challenges.

U.S. exports topped \$44 billion in fiscal 1981, up nearly a tenth from the year before to a new record high. However, U.S. export volume was virtually unchanged from 1980 as high interest rates, the stronger U.S. dollar, and generally sluggish worldwide economic performances combined to dampen demand for U.S. farm products.

Marketing Challenges in the 1980's

Last year's experience typifies the marketing challenges U.S. exporters are likely to face throughout the 1980's.

First, any strengthening of the dollar will make U.S. exports increasingly expensive for overseas customers, and perhaps weaken our competitive position vis-a-vis other exporters. For example, the relative price of U.S. wheat on world markets has risen in the past year because of the strong dollar, while the price of French wheat has declined because of the weakened franc.

Second, the costs of credit are making it harder for U.S. producers to compete. For example, the costs of CCC export guarantee loans are often higher than the costs of certain loans available to producers in the European Community. Some EC loans have interest rates as low as 8 percent over a two-year term, compared with 17-20 percent under a GSM-102 line of credit.

Third, the threat of increased protectionism is always present, as the United States' trading partners and competitors seek to shift the burden of adjusting to changing world economic conditions. Export subsidies, particularly by the European Community, have begun to interfere with the free flow of trade.

And fourth, major producers in South America, Europe, and other areas are giving U.S. exporters more intense competition, most notably as an aftermath of the embargo on grain sales to the Soviet Union.

To meet these challenges, the expansion of exports has been made the No. 1 priority for U.S. agriculture by the Reagan Administration. USDA's export policies have been revamped to emphasize increased participation by the private sector in overseas market development, and to reduce government interference in the market. Government actions are being focused on the areas where they can best support the farm exporter--market development, credit programs, and negotiations with foreign governments and buying entities.

Market Development Initiatives

To go beyond the current success in agricultural exporting, the United States must intensify its sales efforts beyond its traditional markets in Western Europe and Japan. Specifically, the developing countries and the planned economies of the Socialist world, which already account for almost half of total U.S. exports, are the most promising export outlets in the 1980's.

With a population of nearly a billion people, the long-range potential of the Chinese market is tremendous. Even small shifts in per capita use of such commodities as wheat and feed grains suggest tremendous payoffs for market development work.

Just over two weeks ago, I was in China for the opening of a model demonstration bakery built with the help of one of the USDA's market development cooperators, U.S. Wheat Associates, Inc. The bakery is part of the effort to boost U.S. wheat sales to China through demonstrating modern baking machinery and processing techniques, introducing western-style bakery products to the Chinese market, and training Chinese bakers. In fiscal 1981, China imported around 8 million metric tons of wheat from the United States, roughly double the level the year before.

On the same trip the Chinese agreed to permit the establishment in Beijing of permanent private marketing offices representing U.S. producers of wheat, feed grains, and soybeans.

U.S. market development initiatives have already paid off as China has grown from an insignificant factor in U.S. farm trade a few years ago to a \$2 billion U.S. market in fiscal 1981.

The OPEC nations also offer U.S. exporters excellent potential markets as their economic growth and rising consumer incomes have sparked increased demand for more and better food products. For example, meat consumption in the OPEC countries of the Middle East and North Africa has been increasing at an average annual rate of more than 14 percent, while poultry consumption during the 1970's increased annually by as much as 20 percent.

The food import needs of North Africa and the Middle East will likely continue to rise, based on the tight resource constraints on production in the region, explosive birth rates, and growing affluence. Most of these nations have some oil income and, hence, the ability to buy.

Recent growth in U.S. exports to Eastern Europe has also been substantial. Faced with a combination of subsidized consumer food prices, growing disposable income, and somewhat limited opportunities to spend on durable goods and housing, it seems reasonable to expect that expenditures on food, particularly livestock products, will continue to increase. Although crop production in Eastern Europe has expanded substantially during the past decade, the gains have not kept pace with the growing livestock industry, and the gap between domestic production and demand for feed grains has widened. This gap will probably continue to widen in the 1980's.

USDA has undertaken a number of new initiatives aimed at market development in these market areas. One seeks to expand sales of U.S. processed and semi-processed agricultural products. This effort focuses primarily on developing countries with high per capita incomes, namely the OPEC countries and a few others. These nations have the foreign exchange to pay for processed agricultural commodities and generally lack the facilities to process farm products domestically.

Also in the works is a new Food System Development program aimed at low income countries where inadequate marketing systems act as barriers to U.S. farm products. The U.S. private sector will be asked to join with government in solving problems such as shortages of port capacity, lack of grain processing facilities, and poor distribution.

Another strategy for boosting sales has been the launching of an intensive campaign to expand grain and oilseed exports. The Soviet embargo caused stepped up production by our competitors. To counter this, USDA has targeted certain countries--among them, China, Brazil, Chile, Venezuela, Algeria, and Morocco--for expanded market development activities over the next several years. USDA market analysts have identified these nations as having excellent growth potential.

Each of these countries has already been visited by a government-industry team of U.S. grain or oilseed specialists who held high level consultations with officials in these countries. The U.S. objective is to beat the competition with better trade servicing, improved credit programs, and precise marketing plans to move specific amounts of grain in 1981/82 and subsequent marketing years.

I led one of the first teams that was a part of this new effort to South America. My team, which was composed of government and industry grain specialists, was well received by foreign government officials, millers, feed compounders, and the trade. All were appreciative that the United States cared about these markets, and the demonstrated ability of the U.S. government and private sector to work together to serve the interest of the foreign countries was accepted as a clear intent to overcome problems and expand trade to the mutual benefit of both countries.

The team visits thus far have already produced an increase in the credit guarantees authorized for wheat sales to Brazil, a Public Law 480 agreement for wheat sales to Morocco, and plans for a pilot noodle plant and a pilot flour mill in China. A number of exchange visits have also been arranged between U.S. and Chinese industry technicians and policymakers.

Meeting Competition

Agricultural trade does not operate in a vacuum. During the 1980's, U.S. exporters face increased foreign competition in both new and established markets. In wheat trade, for example, the growth in wheat and wheat product exports from Canada, Australia, and Argentina and the European Community has cut into the U.S. share of world trade in recent years.

Future competition will come not only from developed countries, but also from developing countries, such as Brazil, which already has become a significant factor in the world soybean market.

USDA has undertaken several actions in the area of credit to give U.S. exporters a stronger hand in meeting the competition of the 1980's. As a start, the President's budget includes an additional \$200 million in export credit guarantees in fiscal 1982 which will bring total guarantees to \$2.5 billion. This is one of the very few items in the USDA budget that shows an increase this fiscal year--and it indicates what high priority this administration places on export expansion.

As part of the Farm Bill USDA also recommended a four-year extension of Public Law 480. Although the P.L. 480 programs are often viewed as strictly food aid, they have in fact played a very important role in building new markets for U.S. exports. The number of nations graduating from P.L. 480 assistance to buying U.S. food exports commercially continues to grow. Among the former recipients are Japan--now approaching \$7 billion for U.S. farm goods--and Spain, Taiwan, and South Korea--three other billion-dollar markets for America's farmers.

Improving Access for U.S. Farm Products

The third export challenge for U.S. agriculture in the 1980's will be to improve access for U.S. agricultural products in world markets. Despite what we in the U.S. government think are the obvious benefits of freer trade in agricultural products, there is pressure within many countries, including our own, to attempt to solve domestic problems by restricting or distorting trade. The United States is especially concerned by specific practices by the European Community that interfere with free markets, and those in Japan that attempt to restrict U.S. access to potentially profitable markets.

As part of the effort to maintain and expand access to foreign markets, USDA is working to establish an early warning system to alert all concerned parties to restrictionist actions abroad. In addition, the Department plans a study of nontariff barriers related to health, the environment, and other considerations. It has also taken the lead in a special governmentwide effort to review trade policies that are objectionable to U.S. exporters, devise strategies to deal with them, and reestablish the image of U.S. strength in trade policy.

Greater Role For Private Sector

Because the expertise of exporting is not confined to USDA specialists alone, USDA is enlisting the private sector more than ever before in its efforts to improve market access and develop a more effective trade policy. State and private organizations will play a key role in helping U.S. exporters meet the marketing challenges of the 1980's. This includes joint government-industry teams working to improve trade servicing, identify market opportunities, improve U.S. credit programs, and expand market access. This combined approach will improve the United States' chances of successfully meeting the international marketing challenges of the 1980's.

END

Harold F. Breimyer
University of Missouri-Columbia

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It is heartening that marketing is allotted space on the program of the Agricultural Outlook Conference. Ninety minutes may be a Spartan quota but it is infinitely greater than no time at all.

Marketing past the farm absorbs two-thirds the dollar consumers spend for food products. Procurement of farm inputs, another category of marketing, claims 20 cents or so. The farmer's slice is somewhere around 14 cents. These statistics are familiar. And yet marketing has to fight for attention.

Better stated, marketing moves onto and off the farm-affairs stage with the periodicity of a heavenly body. In the 1920s we learned about marketing via cooperatives. In the early New Deal years marketing was not absent, yet George Peek resigned because it was relied on too little. During the rededication to national purpose just after World War II the Research and Marketing Act (Hope-Flannagan Act) accorded almost a Messianic role to marketing. The faith was that efficient marketing would deliver farm abundance to consumers and spare all need for acreage control. The 1950s became a decade of dedication to marketing research and to some innovation in programs.

By the 1960's disillusion had set in; the frustration led to the National Food Commission study. I found myself one of the few who defended the findings of the Commission against charges levied by two schools of critics, namely, merchandisers who resented the Commission's frown on over-elaborate promotion, and neoclassical economists who objected to the Commission's defense of "the right of farmers to organize bargaining associations, to approve marketing orders, and to engage in other group efforts."

During much of the postwar period farmers have sought income protection more through governmental acreage and price support programs than their own marketing initiatives. A notable exception is the significant, though localized, gains in collective bargaining. Only occasionally did marketing burst into view, and then mainly in connection with scandals such as the grain inspection disgrace and futures trading shenanigans. Not even during the export boom of the 1970s did marketing receive deserved prominence, although again there were a few exceptions.

Now in 1981 marketing gets rhetorical acclaim. A new Administration, tenth in my career, announces a return to relying on the market place, itself not a geographical site but an institutional framework. Will marketing be accorded more than ideological allegiance? It is too early in the quadrennium to know; but even an homage so small as booking the topic on this Outlook program is, as I said above, heartening.

The problem with marketing is that its images are wrong. The mental picture is of simple two-party transactions carried out quietly to mutual gain. In reality the marketing system is almost infinitely complex. And whether it is an agent for good or evil depends on how it is done.

I explain this thesis in terms of three paradoxes or contradictions. The first is that the marketing process is powered by the most selfish or even rascally human instincts, yet if carried out in a properly designed institutional structure it can yield socially beneficent results.

The second contradiction follows: the institutional structure that can make marketing a blessing does not self-generate but must be established by a separate rule-making process. Although private marketing organizations can and do set up their own house rules, much rule-making becomes the responsibility of democratic government.

All of which leads to the third and final contradiction: if government is now to give less direct attention to prices and incomes in agriculture it must show more circumspectness to how the marketing function is carried out. It must be more concerned for rule-making.

Hence it is that Mildred Thymian and the Agricultural Marketing Service, Philip Johnson and the Commodity Futures Trading Commission, and Allen Tracy and the Foreign Agricultural Service will have a bigger job to do. It's only small poetic overstatement that Adam Smith's divine hand, emblem of faith in the market, will guide divinely only if Thymian, Johnson, and Tracy help it or at least set boundaries to its motions.

It is tempting to offer examples, which could run from assuring honest democracy in marketing orders to wrestling with dual trading in futures to resisting the temptation to drop ethical rules in international trade. But my message is not the particulars but the principle. The market will perform satisfactorily only if it operates within well chosen rules. Establishing those rules requires sensitive and prudent participation by democratic government. And the agencies represented on the program today are in the forefront.

William G. Leshner, Assistant Secretary
for Economics, USDA

1982 Agricultural Outlook Conference, Session #36
Washington, D.C.



Economic Conditions and the 1981 Farm Bill

It has been a tradition at the Outlook Conference that during farm bill years the chief economist of the Department of Agriculture reviews the new farm legislation and the economic climate within which the farm bill is formulated and will have to operate. Unfortunately, we do not yet have a farm bill. A key factor in delaying final adoption is the uncertainties about the nature of the U.S. and world agricultural and general economic environment.

However, it is just such uncertainties and the magnitudes of the swings in economic conditions we have seen in the past 4 years that has led this Administration to seek flexible legislation which relies on the market to allocate resources in response to changing economic conditions. No one can accurately predict the future, but the Federal government can and should provide a climate for more efficient adjustments through a greater market oriented farm policy.

As we move in the direction of a more market oriented farm program, increasing pressure will be placed on our statistical and economic information and outlook programs. Never will the need for solid, accurate information based on reliable, objective and timely statistical and economic analysis be greater.

I truly believe that a primary mission of the Department of Agriculture is to provide high quality information to participants in the market. This is a cornerstone for the successful transition of agriculture to a greater market orientation which permits it to adopt to its dynamic environment. While the Department of Agriculture has and will continue to make its contribution to the process of bringing the Federal budget under control, I can assure you that as we prioritize our programs I will not let it jeopardize that primary mission. Nor will I allow the quality of the work to suffer--we may eliminate some lower priority programs but the quality of the work we do must remain high.

The Outlook Conference is an excellent example of providing participants in the market with key information. The agricultural outlook is currently dominated by abundant supplies and generally weaker than expected demand conditions. Prices are under pressure and stocks are rebuilding sharply following reductions over the past year. These factors coupled with the impacts

of high interest rates and rapid inflation have made 1981 a difficult year for farmers. In addition, the first half of 1982 is not encouraging. At the same time, conditions can change rapidly. In this regard, the wheat market is an excellent example of a recent and rapid reversal in market conditions. It was not that many months ago that wheat was considered in an excess supply situation.

Agricultural exports continue to be a strong factor and could become increasingly so in coming months. The key message is that no one knows with any degree of certainty what the future holds, but this Conference and the Department's information system provide an opportunity to identify the factors which must be watched by participants in the market. Now the question is whether the Congress and the Administration are going to be able to agree on farm legislation which will permit the market to send the proper signals to farmers, processors, consumers, and others who must adjust to a changing economic environment.

An average farm today produces two-thirds more output than some 15 years ago while using only half again more total inputs. The average farm today has nearly a third more land than 15 years ago and uses an increasingly complex machinery and equipment complement. As a result, farmers today have increasingly large debt burdens. Thus, farmers must respond ever more quickly to changing market and weather conditions--a planning or managerial error can mean the difference between doing well and having significant income problems.

In most respects, farming resembles the operation of other small businesses. While weather and biological production processes play a significant role in farm production, more and more, the American farmer is affected in much the same way as other businesses by high interest rates, inflation, rising taxes, and the value of the dollar. In short, the agricultural economy cannot be healthy if the rest of the economy is encountering difficulty. Take inflation for example. Farm commodity prices have increased 41 percent since 1978. This should have brought strong improvement to farm income. But, inflation drove costs up 44 percent, negating the improvement in receipts.

Because agriculture is a major component of the national economy, elements of the President's Economic Recovery Program will directly impact our farmers. This program is designed to reverse the trend toward an increasing reliance on government in the economy and to eventually eliminate Federal deficits. Briefly the program is aimed at (1) reducing the growth of Federal outlays, (2) reducing marginal tax rates on income, (3) accelerating depreciation allowances and increasing investment tax credits for business, and (4) generating a market-oriented economic philosophy with emphasis on reducing costly but unproductive regulations. The economic recovery program will have important effects on agriculture. Lower tax and interest rates and industry deregulation will induce more investment, contribute to improved income and productivity, and reduce the role of government in the agricultural industry.

When the Administration took office last January, several farm issues demanded immediate action. These included the need to lift the Soviet grain

embargo and allow markets to function, to get the dairy program under control and to develop a four-year farm program proposal to replace the 1977 Farm Act. We felt it important that we take the initiative to advance, for consideration by the Congress, programs consistent with today's agriculture and its role in the larger economy.

The need for a consistent and cohesive set of agricultural programs is obvious. Agriculture differs greatly from other sectors of the economy in that production depends on natural and biological forces. Weather alone can transform crop abundance into scarcity. Thus, there is a need to protect against natural disasters. There is also a necessity in agriculture for protection against economic disasters which are inherent in an industry with substantial fluctuations in output. Agricultural commodity price variations can be large as supplies change, leading to significant changes in farm income from year to year. Without a sound program of assistance, farmers could work at odds with the market--too much fixed capital investment during periods of high prices and incomes, with disinvestment during periods of low prices and incomes.

While recognizing the need for farm programs, we felt that these proposals would need to embody certain principles. First, we decided that our proposals must embrace a greater orientation to the market than those we have experienced in the past. In many instances, commodity programs which started with a few basic features became highly complex--so much so that both farmers and program administrators found them difficult to comprehend. In fact, the programs themselves came to be a major source of uncertainty to farmers. Importantly, many of these programs distorted agricultural incentives and induced inefficiencies because of little reliance on the workings of the market.

To secure more market-oriented farm programs, we sought to keep them flexible and to avoid setting prices at artificially high levels. We also sought to remove unnecessary constraints on the operation of the farm business.

More specifically, for the grains we proposed continuation of the price support program, a simplified grain reserve, and reduced dependence on mandatory acreage controls including historic allotments. For other commodities we sought to remove constraints on the ability to produce and market and to bring price support levels more into alignment with market realities. We sought to make the programs easy to understand and to use. Our proposals were designed to do these things in a manner that was consistent with the overall program for economic recovery.

Yesterday, the House and Senate Conferees began reconciling differences in their respective versions of 1981 farm legislation. The Senate's version of the farm bill is generally in accordance with the principles that the Administration felt were important as well as keeping within the President's budget. The Senate basically agreed with the authorities we recommended. Key commodity program features of the Senate bill include:

- o establishing minimum loan levels for grains. But the bill also gives the Secretary discretion in moving above the minimum level if the supply and demand situation dictates such an action;
- o specifying minimum target prices. The Secretary can adjust target prices above the minimum level if necessary. Originally, the Administration did not recommend target prices. However, the Senate was reasonable in their proposals and we accepted their provisions for the food and feed grains:
- o giving the Secretary authority to implement acreage reduction programs when necessary to reduce excessive supplies;
- o suspending the use of allotments for rice thereby making all producers eligible for program assistance;
- o extending authority to establish a farmer-owned reserve while giving the Secretary discretion to set reasonable price and quantity levels;
- o continuing the current market-price based loan formula for cotton with a 55 cent per pound minimum and a minimum target price;
- o eliminating the existing allotment system for peanuts and replacing it with a farm production poundage quota system based on 1981 production; and
- o providing for dairy a minimum price support level of 70 percent of parity except when projected purchases exceed \$750 million. In this case, the Secretary may continue the previous year's level of support (but not less than \$13.10 per hundredweight).

On the House side, however, there is a considerably larger gap between the commodity program provisions that have been proposed and what the Administration was attempting to achieve in the new farm legislation. Our difficulties with the House bill are not based solely on the basis of budget considerations; there are also basic philosophical differences.

The more generous dairy provisions, the indexed target prices and loan rates, the mandatory set-asides, and the rigid grain reserve policy all make the House bill unacceptable. The House version of the 1981 farm legislation is a reenactment of the 1977 legislation, but with modifications that reduce the authorities extended to the Secretary to adjust programs for changing market conditions which eventually could take us back to the problems and policies of the 1950's and 1960's. Take the grains for example. The House bill specifies a minimum target price for 1982. Thereafter, the target price would be adjusted

to reflect changes in per acre production costs, including an estimate for the current year. The House bill's minimum loan rate also increases each year at the same rate as the target price. Set-asides are mandated if specified carryover levels are projected for the previous marketing year; loan rates are also increased above minimum whenever set-asides are in effect. The House bill mandates a rigid grain reserve program and specifies a complicated formula of entry prices and release levels. Another major problem with the House bill is that the dairy provisions are too costly and send the wrong signal to producers who should be taking steps to cull their herds.

The major differences between the House and Senate will have to be resolved by the Conference Committee. We have sought and will continue to push for programs which recognize the needs of today's agriculture, and even more importantly, lay the foundation for a healthy and prosperous agriculture for the longer term. This is important for farmers and ultimately for all food consumers here and abroad. For, as Secretary Block has said, "The cornerstone of a sound national food policy is economic prosperity on the farm."

POLICY FOR THE 80's

Senator Richard G. Lugar (R-Indiana)

1982 Agricultural Outlook Conference, Session #36
Washington, D.C.

Many persons in our country are deeply troubled by issues that have been discussed since the outset of this conference. They are not easily discussed when the President of the United States has already indicated that the Senate position on the 1981 Farm Bill must prevail and further has written a letter to the House members saying that their bill is \$8 billion too high.

When the House Conference Chairman read the letter, he presumed the President already made a decision on the behalf of the Senate and that the Conference really wouldn't work. It depends, I suppose, on the general expression of people in agriculture throughout the country as to whether we will have a Farm Bill or will go back to the 1949 Act. My guess is that if we did that rapidly, we would discuss on the Senate and House floors repealers of everything that occurred in 1949. There are many people who dislike that degree of uncertainty but such is the world in which we live.

Today, I want to deal with some other matters which, unfortunately, we have not discussed in the detail that we might have which I perceive are the issues of the 80's--the ones that will determine ultimately, despite all the backing and filling of the moment on the Farm Bill, what will actually happen in American agriculture.

First, I think we must take as a given that our ability to produce, and to produce so abundantly, for ourselves and our world is an element of strategic importance. I use "strategic" in the same sense that we use it in the Foreign Relations Committee when we're talking about the MX missile in a mobile mode, or the triad of strength, or ways in which our place in the sun as a nation is assured and insured. In fact, the food situation is sometimes talked about as a weapon. We don't really use that word in the military sense. It seems that what we do say is that this country, a great superpower, does have the unique ability to feed itself and to feed many other nations. If we wish to serve as a reserve for all nations, there is a possibility in the most idealistic sense that given our expertise, our sense of missionary zeal, and our ability to continue to advocate free markets, we can go far to make certain that every person in the world has a chance to eat.

Now that is an age-old question, one that may be beyond our ambitions; some folks don't think it's a very good idea and others feel that it violates sovereignty. But we start with a proposition that we have something here that is absolutely unique in the world. It is very important, therefore, that we preserve it. The question then is, how much should we produce and how much agriculture should we have? That is where folks begin to part, but this is an issue we really ought to try to confront.

Clearly, there is a large number of people in the world, and we try to come to some census counts of how many there are and project how many more there may well be. I shall not indulge in that. Many of you who deal in population statistics are far more gifted in showing the ranges. But it does appear to be a growing consensus that the ingenuity of people in this world may be sufficient to provide enough food for the numbers living here. That was not the consensus I would have submitted; maybe even 10 years ago.

In the Club of Rome era, the thought was that the Malthusian specter would overtake us, and the number of persons pushed in for the rapidly diminishing resources would simply bring about a degree of catastrophe unknown. More and more, schools of thought are growing that would say the limiting factor is our ingenuity, and not necessarily our metals and minerals and resources. Some argument about that from agriculture would say that land, after all, is a fixed resource; that only a certain number of acres can be cultivated; that you can only pour so much fertilizer on top of it; you can have only so many pieces of equipment; and there's only so much energy that you can apply to it. Surely, there must be some limits. And indeed, if all of our research stopped there might be something to that case.

In a way we have been living off our research capital for a good long while. There are persons who would lecture you today that the per capita production of each of the major crops tailed off in the mid-70's and have been declining in the secular sense ever since. But others would say that this is largely because we have not spent time and money going after the higher yields and there was no particular reason to do so. We've been given an ominous specter each year that despite ourselves we would over-produce and have the problem of the 30's on how we dispose of what we produce.

We have to come to some conclusion about what we really want to do in American agriculture and with American agriculture as a leader of world agriculture. How much do we want to produce? And essentially how much of the world's resources do we want to devote to that degree of production?

My own optimistic view is that we can probably do a very great deal-- a great deal more than we are doing now. The question will simply be how much, given other things we might want to do with the world's resources and with our own. If we could come to some consensus on let's say, a full production ethic (and that is the most satisfying one in a humanitarian sense) and almost any other ethic comes to the idea that even though there are people in the world hungry, as a matter of tactics we are going to do something less and simply hope that the hungry will learn how to grow food for themselves or will survive in some other way. It is satisfying to think of full production, but as a nation we have not yet come to grips with how many persons we would want to have involved in that production. Again and again in most speeches to groups on farm economics, we talk about the glories of the family farm and the need to perpetuate the families in farming. We all need to believe in that idea.

On the other hand, we note that there are fewer families involved in farming. There are all sorts of different kinds of families involved in farming as indeed there are all sorts of families in general life. The majority of most family farmers' income is now coming from other sources while family farming is still pursued. We all know that this has been

occurring and yet there is sort of an ethos of family farming that hangs over all, and the thought is avoided that the number of persons now involved has declined into a precious few, maybe 3 or 4 percent of our population and probably less than that in terms of genuine farming.

A feeling has persisted from Jefferson onward that it would be healthier for our democracy if more people were involved with the soil, but we are not sure how to bring about policy that would encourage this. This is one big public policy issue, should we be neutral on the question or should we deliberately attempt to skew farm legislation, tax legislation, other social legislation so we will have more people there. I submit that we have never come to grips with it and maybe we should. But this I think is a basic issue of the '80's. My suggestion would be that if we lack a deliberate policy, there will be many fewer persons at the end of the decade involved in farming and there will be a continuation of this issue. Whether in a market economy, free enterprise economy, or a private property economy, we ought to be taking limiting steps in any event.

There are some peculiar problems about farming as an industry as opposed to the manufacturing of automobiles, for example, which is quite a pursuit in the state I represent, or the manufacture of farm machinery which goes on to some extent in Indiana too, or the manufacture of steel. The monopoly powers that both management and labor have in automobiles and steel, and even in the pursuit of agricultural equipment, are very substantial. By that I mean simply, people are able to set a price for the product and people are able to set a price for an hour's worth of labor plus the fringe benefits and that yields very well.

As has been noted by all of you in your lectures here, we have farming more or less free floating, granted a few props in the form of target prices and loans, and a bit of subsidy here or there, but these are rather miniscule in comparison to the almost intractable blocks that are involved when you try to deal with the automobile problem. For example, we had in the case of the Chrysler situation, a demand on the part of the Congress that the UAW hold a national referendum to give back certain holidays, and in another referendum to effectively cut the price of labor per hour. Verily, by referendum, the workers decided to do that and thus the thing is still alive. But there's no free-floating market there. As a matter of fact, a very large number of workers voted not to accede to the referendum and to take a chance that the whole industry might simply go down the drain. This is why, in a period of high inflation, we now have things that don't come down very fast. We shouldn't anticipate that they will come down very fast, but in farming often they do, because of volatile swings.

So how do we put farming in the ballpark with all the rest of these players? It seems that we've never been able to come to grips with that and maybe we can't. Many farmers would rather not be put into that sort of situation. Many persons in the whole food industry glory in the fact that they are strong because they have been market-oriented. They would say that the proof of the pudding is that we do agriculture very well.

We don't produce automobiles very well anymore, and not very competitively, vis-a-vis anybody else. If you are intent on subsidizing industries ultimately, you will pay the price in terms of having something less competitive. If we have at least some consensus that will be used in thinking through the vulnerability question, it seems to me that there are a whole set of other issues I'll touch upon simply briefly.

As to our capital stock, that is the soil itself; the whole conservation situation Secretary Block has laid before the Congress and the country is so terribly important. I visited the mainland of China a while back, and noticed that there are some good conservation practices there and some that are not so good. And I also noticed in long stretches, there were no trees at all. One of the problems about land--no matter if it's in a socialist society or a capitalist society--is that it is a long-term proposition. The thought is that the family farmers are more thoughtful about their land, and that people who rent land are less thoughtful, and persons who have it in a corporate situation might not be thoughtful at all. I'm not so sure that we can draw such neat conclusions. But the fact is that an awful lot of top soil is being lost all over the country and has been for a long time. On the whole, many people looking at short-term economics have never found it very useful to invest for the long term. Clearly, they didn't think that it was worthwhile to plant trees.

How do we bring a perspective over the course of time with regard to vital resources that are the heritage for those that go beyond it? It seems to me that we are making some headway with those issues. Secretary Block has at least initiated a debate for this decade. I hope that it will not take the decade to make considerable progress. In many counties all over the country, the progress has been astonishing already. I highly cite these as vital issues.

There are two more issues that have come before the Ag Committee that I hope would come before America. These are the questions of nutrition and health and the correlation between what we're doing as producers and how we're going to live longer and happier lives, to the extent our lifestyle changes may be of value to us. This sort of subject just turns off a lot of folks. They would say, "By golly, here's another lecture on the Senate nutrition goals. By golly, you're going to advocate that we ought to eat fish and chicken as opposed to beef and pork." I'm not going to do anything of the sort. As a matter of fact, I've produced beef and pork for a long time and have a strong vested interest in feeding corn to livestock.

I would just simply say that there are a great number of people, and I'm one of them, that are very much interested in the correlation between nutrition and heart disease, if there is any, between nutrition and cancer in all of its forms; in a whole host of issues coming down the trail that are of normal interest to many sophisticated and unsophisticated Americans. I think that this is a very exciting era as we think in a total way about what we are doing in our production cycle and how we might be of assistance to people.

I would submit that as a final issue that there is at least some hope that American agriculture, in addition to being a vast consumer of energy

resources, will be a vast producer of energy resources. I'm optimistic about this. I've experimented with everybody in all the forms of gasohol and methanol projects. I love to see all the things that have happened at Purdue come into reality. But the facts of life are that there are lots of possibilities out there and many people believe the biomass solution to energy, if not the total answer, is at least a partial answer and a mighty good one. There are things that may be happening on our farms that intersect other parts of the economy in a much more vital sense than they have before.

Let me stop at least with that agenda before you to say that this is not an exhaustive list of the issues of the 1980's but ones that are worthy of our attention. If I have been harsh in my initial comment about myself and my colleagues on the Farm Bill, let me simply comment that by and large, the press covers the farm situation almost in a score-card sense that either farmers win or lose. We've managed to have a very large Farm Bill with an idea of \$16 billion attached to it instead of \$10 billion. Some will say that farmers won at 16 and some will say they lost. It may be that neither one of the figures has anything to do with reality and this Bill Lesher tries to reason with us.

Who knows what the weather will be in five years, whether in three years out of five will have a drought or a monsoon. Bill Lesher doesn't know that. But everytime we come to one of these issues they say, "Dr. Lesher, in 1984, what will be the price of wheat?" How in the world would Dr. Lesher know the price of wheat in 1984?

This is the basis of the debate being fought. I would suggest that the issues that I've laid before you are probably being more productive, prosperity for farmers, better use for our resources and certainly more confidence in the statesmanship of this country in managing its agricultural resources.

Thank you very much.

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